INTRODUCTION TO MOTHERHOOD

GRANTLY DICK READ

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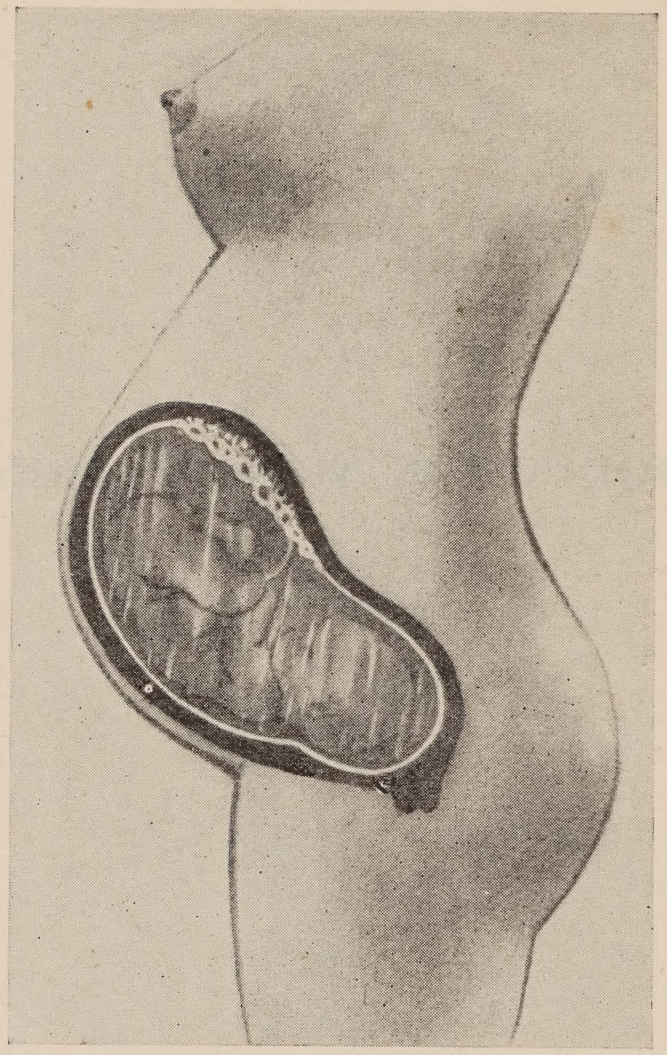

Baby *in Utero* near to Full Term.

INTRODUCTION TO MOTHERHOOD

BY

GRANTLY DICK READ

M.A., M.D. (Camb.)

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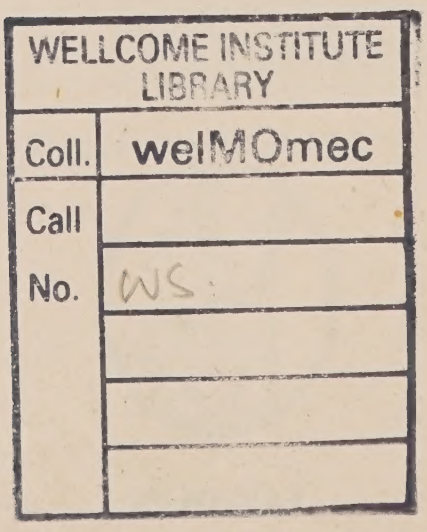
CHILDBIRTH WITHOUT FEAR
being the thirteenth impression
of REVELATION OF CHILDBIRTH

THE BIRTH OF A CHILD



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To JESSICA

PREFACE

THIS work gives practical instructions to young people contemplating marriage and parenthood. After reading its pages I hope a knowledge of the task before them and the manner of its performance will dissipate many of the unfounded fears which have been instilled into women for centuries, and will encourage wives to look forward to pregnancy and childbirth with confident enthusiasm.

Since the views put forth in my previous works, entitled *Revelation of Childbirth* in England, and *Childbirth Without Fear* in America, and later emphasised in *The Birth of a Child*, a great change has come over medical and even lay thought concerning the transforming power of mother-love and the immense psychological value of relaxation and education in counteracting the fear of childbirth.

In issuing this further book I wish therefore to take the opportunity of thanking the many women from literally all corners of the world who have written to me of their happy experiences of physiological labour. Very few of these correspondents have been known to me personally, but from their records I have obtained much information and encouragement. Their desire to be of service and their unselfish interest have been of great assistance to me. They have inspired one mere man to evolve by trial and error procedures for their comfort and safety while undergoing an experience he himself can never know.

Such expressions of encouragement could not have found outlet had it not been for the active help of my publishers ; and I would therefore like to express my gratitude to Dr. Johnston Abraham and Heinemann Medical Books Limited for their courtesy and consideration at all times.

April, 1950. G. D. R.

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Author's Note

The illustrations are by Vreny Wasem of Johannesburg ; for their clarity and originality of style I express my thanks.

INTRODUCTION

The object of this small book is to set out in simple words the method by which Natural Motherhood, in its widest sense, may be attained and maintained. During the last twenty years it has been shown clearly that many of the difficulties and discomforts of childbirth can be prevented by understanding the processes. The law of nature makes it quite clear that pregnancy should be the healthiest time of a woman's life and that the birth of her child should be without pain or danger. We have departed in some ways from the letter of the law and a certain small percentage of unnatural or abnormal labours do arise, but that number is so small that the average woman need not think of abnormality if she has lived a healthy life.

Taking everything into consideration 95 per cent. of women should give birth to their children without danger or discomfort to themselves or injury to the baby. This is no longer a theoretical statement, because from many parts of the world the results of investigation have proved it to be true. It is not the intention of the writer to give the details and the scientific facts of reproduction. Such matter can be read in books upon the subject of physiological or natural childbirth. The request has frequently been made, " Will you write in simple language, as shortly as possible, instructions for a woman who is going to have her baby ? " It is in answer to that request that these chapters are compiled.

There is little doubt that for many generations women have been justified in anticipating pain and even danger in childbirth. The fear that has become so general has arisen from the ignorance and malpractice of former generations. The history of childbirth and the treatment of women during pregnancy and labour would

shock most readers. Now it is recognised that where there is fear there is likely to be pain and the past history of labour and its horrors is one of the major causes of pain in childbirth to-day. The first principle therefore of obtaining a natural birth will be to take away all fear. That can only be done if the woman understands how a child is made and born and how marvellously she herself is made so that she may bear children without danger or difficulty.

One of the most devastating fears is that which is spread by propaganda concerning the unknown. The simple processes of childbirth are no longer wrapped in mystery. The advent of motherhood is woman's pride and joy. Her understanding brings enthusiasm as she seeks instruction and information from those who teach. She prepares herself and practises to perfect her mind and body for the great event. She enters the ultimate examination of her womanhood fearlessly, fortified by faith in her ability to perform. Such women are most impressive when labour commences. The exhilarating confidence they radiate when they arrive at the maternity home is more than justified by the results of their labours. They leave the hospital in full vigour of unimpaired health.

There is no longer any doubt that every woman who is healthy and who works and tries to have her child naturally can do so. Further, that every woman who has done so will speak of the unbelievable joy that she experienced at the birth of her baby. She will speak of good health, happiness and a desire for more children. She will not hesitate, as more children arrive, to tell of the bond of love that tightens around her, her husband and family. The mental and physical standard of children born according to the law of nature and nurtured upon the breasts of their mothers can already be shown to have improved the physical development and intelligence of the rising generation. Such rewards as these for so little effort, cannot easily be rejected.

The return to the simplicity of the Creator's design will, in a few generations, alter the attitude of women throughout the world towards childbirth, motherhood and parenthood. It will reject the presumption that Science is greater than Nature. True science is based upon the development of the knowledge of things as they are. With such knowledge, much that is new may be evolved, but the key to all development will always lie in the discovery of the means by which nature works and the substances it uses for its purpose. To-day we look forward to the foundation of a new society, in which the thoughts of men and women will be changed and directed towards the happiness and well-being of the race. This will gradually come with succeeding generations of children whose brains and bodies are built by the blood of happy and healthy mothers and who are born un-injured by drugs and interference.

Obstetrics is greater than the Reproduction of the Individual. It is the Science which unfolds and fashions a New World. The magnitude of its far-reaching influence upon humanity is not discerned by those who still associate it with disease. The emergence of mankind from its present gloom will not result from the repair of stock which has already failed to stand the test of stewardship. By purifying the fount of life and protecting it from errors of the past a new quality of man will rise, with clear vision and purposeful philosophy, to lead where power and politics have failed.

The Female Reproductive Organs

The accompanying diagram shows the organs of reproduction in a woman's pelvis. The pelvis is that part of the trunk which is below the level of the haunch bones. In the centre is the uterus which, in the virgin state, is about 2½ inches by 1½ inches by 1 inch in size. It is a small muscular organ and weighs about 1½ ounces. In general, it is the shape of a pear with the stalk end pointing downwards. From its upper end, rather like arms coming off the level of the shoulders, are two tubes, called the Fallopian tubes, each 3 inches or 4 inches long, which open out at the ends furthest from the uterus into a shallow bell-shaped formation known as the fimbria. Underneath the " bell," on each side, lie the ovaries. These organs vary in size but are usually about 1½ inches long, ¾ inch wide and ½ inch thick. It will be seen in the diagram that the uterus is attached to the upper end of the vagina. The urinary bladder is situated in front of the uterus and the urethra, through which the bladder is emptied, lies above the vaginal opening within the folds of the vulva. The rectum and anus lie behind the vulva and perineum, which is the muscular area separating the two orifices.

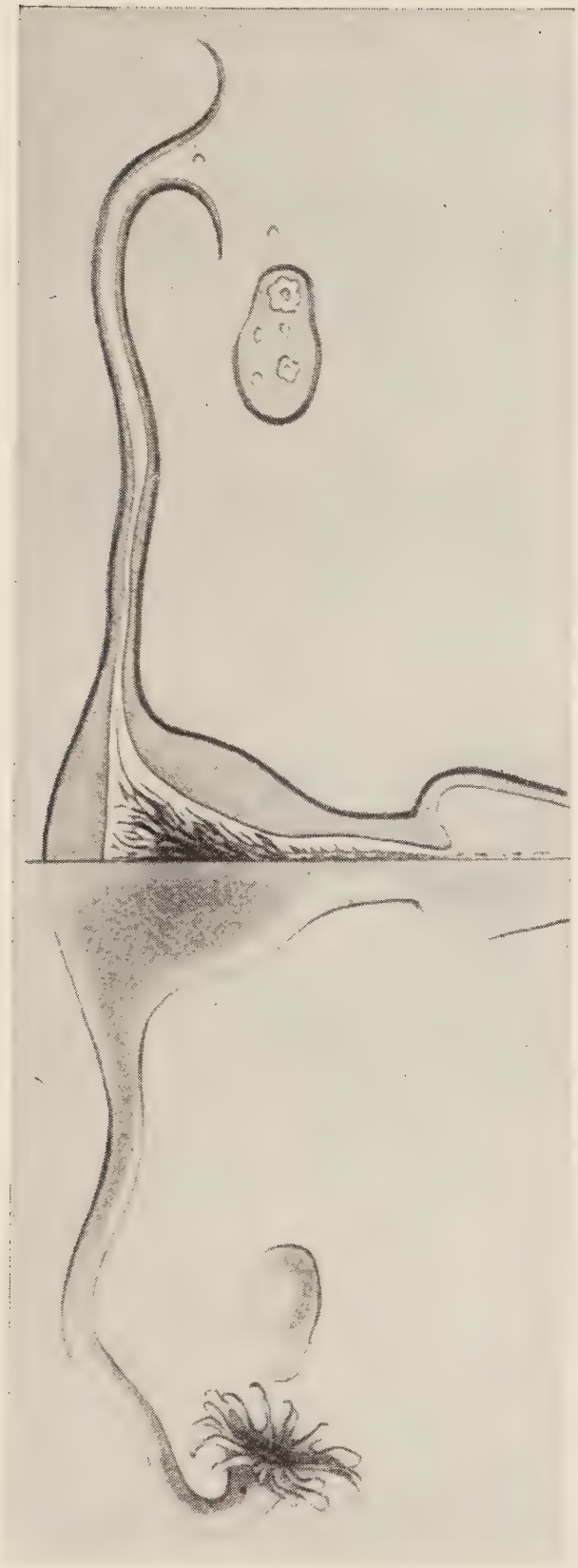

FIG. 1.—The Female Reproductive Organs.

The Ovum

The ovum enters the fimbria of the tube. Why or how this occurs is not clearly understood. By the muscular action of the walls and the nature of the lining membrane of the tube, the ovum is moved along and in about three days it reaches the uterus. If it is not fertilised it is discharged with the menstrual flow at the end of the monthly cycle.

Fertilisation of the Ovum

The egg may be fertilised, however, by the male element which is produced in the testicles, the complementary organs to the ovaries of the female. This male element or sperm has a long tail and an arrow-pointed head which enables it to work its way from the vagina, where it is deposited, up the cavity of the uterus into the tube, where it pierces the ovum and so fertilises it. When this occurs the fertile egg is moved through the tube and, by a series of changes which to the ordinary human mind is nothing short of miraculous, it becomes embedded in the wall of the uterus and starts to grow. When this occurs menstruation ceases, the lining of the uterus alters its character, new blood vessels and new structures develop for the single purpose of carrying nutrition to the egg as it grows.

The Commencement of Pregnancy

The duration of pregnancy is counted from the first day of the last menstrual period. A baby is fully developed in 280 days (*vide* p. 14), that is, forty weeks, nine calendar months or ten lunar months. Most women suspect that they are pregnant when the expected period does not arrive. They feel perfectly well, unless for any reason they are anxious about pregnancy. If they miss for a fortnight or three weeks, having previously

been quite regular, it is more than likely that they are pregnant.

When about six or seven weeks pregnant, many women will be conscious of sensitiveness of the breasts. Unless their minds are balanced and they are happy to have conceived they may develop some nausea or morning sickness. These discomforts during the first few weeks, in the large majority of cases, are the outcome of a nervous attitude towards pregnancy. There are some, undoubtedly, particularly if they are over the age of twenty-seven, who do not react well to the necessary chemical changes that pregnancy involves. But even these signs and symptoms are intensified by anxiety and, in the absence of any fear or anticipation of trouble, they rarely appear.

Hearsay

One of the bug-bears of pregnancy is the conversation of " friends." Although it is a matter of general knowledge to-day that childbirth need not be attended by the tribulations of a few years ago, women still delight in talking about their own experiences, or the experiences of which they have heard. Such communications are invariably prompted by the presence of a woman who is about to have a baby. Everything that has ever been read in papers, journals or other literature about abnormalities is discussed. Those who have had children, particularly those who were completely unconscious throughout the event, express the pious hope that the woman who is about to have a child will not have to go through what others have been known to experience. It creates apprehension or even panic in the minds of those unfortunate listeners who do not know the truth.

I cannot urge, therefore, too strongly, that if discussion must arise, which concerns pregnancy and childbirth, care should be taken not to say anything which is likely to mislead or to injure the minds of young pregnant

women. We cannot prevent women whose chief interest in life centres around their own health and suffering from calling attention to it. It is the only means that they have of obtaining attention. We can, however, warn pregnant women that the wisest principle is to turn a deaf ear to those who would create the state of alarm. Listen only to the teachers—those who will prepare them for labour and be in attendance when the child is born. Read those books which set out clearly the true facts of childbirth and keep in the foreground of the mind that it is a natural process which can be guided by the hand of the modern scientist and bereft of the influences of misunderstanding. There is no reason, whatever, to fear childbirth and there is no justification for any healthy woman to suffer during the birth of her child. It is a great social crime to allow a woman to have her baby without preparing her mind and her body for the event. It is equally a social crime that any child should be allowed to grow to years of elementary understanding without knowledge of the natural functions of her body. Most of the mental and physical discomforts of puberty, marriage and childbirth, would be prevented if children were taught the beauties and wonders of nature at an early age.

When to Visit the Doctor

A woman who knows that she may be pregnant and who goes two or three weeks over her time for menstruation should see a doctor, particularly if it is her first baby. The early weeks of pregnancy are extremely important, not only from the point of view of the development of the child but the development of the mother and, particularly, the preparation of her mind for motherhood.

Between ten and twelve weeks a pregnant woman should visit her doctor again. He will then, if he has not previously done it, make a routine examination, not expecting to find anything wrong, but in order to

satisfy himself that everything is healthy and as it should be. He will take the blood pressure and record it for future comparison. He should take a little blood from her arm and have certain chemical investigations made, which will enable him to forestall any possible variations from the natural state. The heart and lungs will be examined and the teeth, hair and finger nails come under his scrutiny. The abdomen will be palpated to see that the organs are all healthy and in good position and tests will be made to show that the nervous system is in good order.

On this visit the woman should take a specimen of her urine. This is prepared by boiling an 8-ounce medicine bottle overnight and decanting into it, with as little contamination as possible, the first specimen of water passed in the morning. The bottle must be corked firmly and a label tied or stuck on, bearing the sender's name and the date the specimen was taken. Between 6 and 8 ounces will enable the doctor to make all necessary investigations.

At this visit some medical men prefer to make an internal examination of the pelvis, not only in order to ascertain the measurements of the birth canal but also to be sure that the uterus is lying in a good position within the pelvis. This examination will occasion no discomfort particularly if a woman remains relaxed and breathes quietly and deeply whilst it is being made.

Some doctors prefer to make this examination with the patient lying on the left side, with the knees drawn up; others prefer them lying on their back with their knees open so as to give easy access to the entrance of the vagina. With one hand on the abdomen and the two fingers of the other hand gently inserted into the vagina, the position and outline of the uterus can be determined without any discomfort and the internal measurements of the pelvis estimated at the same time.

This examination should not be left until later than the twelfth or thirteenth week, unless the doctor is quite

satisfied that the uterus is in a good position and rising well out of the pelvis. Owing to the upright stance that man has, over the ages, adopted, the uterus sometimes tends to fall backwards in the pelvis. This may occasion frequency of passing urine, owing to the lower and narrow end of the uterus pressing upwards upon the mouth of the urinary bladder which lies in front of it. It may also give rise to a certain amount of discomfort when the bowels are opened, since the rounded upper part of the body of the uterus may press back upon the bowel which lies behind it in the pelvis. This adjustment is easily made, either with the fingers or with a specially designed instrument. It is a simple procedure and need cause no alarm to the patient. If the uterus is put in a good position by the thirteenth week the tendency to slip back ceases, because its size and the rapidity of growth enables it to rest upon, rather than in, the pelvic brim.

It cannot be emphasised too strongly that women should be in constant touch with their doctors or the clinics that they attend throughout the whole of pregnancy and until at least six weeks after the birth of the baby. These chapters are not intended to instruct mothers in matters which are the special province of medical advisers. There must be someone to whom they can turn for advice upon any subject which creates the slightest doubt in their minds.

Development of the Uterus and Baby

With the growth of the fœtus, as the small infant is called at this stage, the uterus develops in size. The muscle fibres become longer and more numerous. Fluid is secreted into the cavity of the organ, which fills and expands with the increasing size of the uterus. Consider for one moment the first growth of the egg. When it is fertilised it is barely visible to

the naked eye and 1,250 lying side by side would measure 1 inch. By the end of the first month it is twenty times as large: between sixty and sixty-five placed side by side would occupy 1 inch. By the eighth week the fœtus at full length is over 1 inch long. Its arms, legs and head are clearly distinguishable; it has its own circulation of blood and its own nervous system. By twelve weeks the fœtus measures from 3 to $3\frac{1}{2}$ inches in length and, in the accompanying table, the development both in length and weight is given, until the baby is ready for birth. These estimations, naturally, are variable, but establish a good average idea for a mother who rightly wishes to know the approximate size of her baby at any time during pregnancy. The measurements are taken from the crown of the head to the heels.

At	Length	Weight
16 weeks.	4 to $6\frac{1}{2}$ inches.	$\frac{1}{4}$ lb.
20 ,,	8 to 10 ,,	$\frac{1}{2}$,,
24 ,,	11 to 14 ,,	$1\frac{1}{2}$ lbs.
28 ,,	14 to 15 ,,	$2\frac{1}{2}$,,
32 ,,	15 to 17 ,,	$3\frac{1}{2}$,,
36 ,,	17 to 18 ,,	$4\frac{1}{2}$ to $5\frac{1}{2}$ lbs.
40 ,,	19 to 21 ,,	7 to 8 lbs.

Nourishment and Protection of the Baby

In the uterus the baby is fed through a tube, known as the umbilical cord. This is attached to the child at the navel, or umbilicus, in the centre of the abdomen. The other end is joined to the inner surface of an organ named the placenta. It is by this means that a child is nourished. This wonderful organ, the placenta, is attached to the inside wall of the uterus and filters from the mother's blood the substances necessary for the development of the child. We have relatively little

knowledge of how it accomplishes this, for it not only has the power of giving the child what it requires, but it also has the power of refusing to take from the mother's blood that which may not be advantageous to the child. The umbilical cord at full term may vary in length from 1 to 3 feet. The baby floats in a bag of water which protects it from injury or from being disturbed by any reasonable movements of the mother. This water, or liquor, maintains a constant temperature and allows the infant to move freely within the womb.

The Milestones of Pregnancy

With the progression of the weeks there are certain landmarks of pregnancy. At eighteen or nineteen weeks the mother will become conscious of the baby's movements. This is known as quickening.

At twenty-six weeks the child is known as viable, which means that if through accident or illness it should be born it will be born alive with a possible chance of survival. By twenty-eight weeks, if a child is born, it has a very good chance of survival.

Between twenty-eight and thirty-two weeks the baby's heart beats sufficiently loudly for the mother to hear it through the doctor's stethoscope, although the doctor, with his practised ear, will have been able to detect it before this time. It gives considerable pleasure to a woman to be allowed to hear the rapid ticking of her baby's heart and should not be denied her if she wishes to listen.

By thirty-five weeks the baby should have taken up its correct position for birth. That is to say, its head should be downwards, over the brim of the pelvis and its back slightly to the right or the left of the mid line. Many doctors advise that the baby in the uterus and the mother's pelvis are x-rayed at thirty-five weeks. In the majority of cases this gives no more information than can be ascertained by the hands of a skilled obstetrician, but

from time to time conditions are brought to light, attention to which will make labour easier. It has also a very salutory influence upon the mother (and the father) to see a picture of the child who is so eagerly awaited.

About the thirty-eighth week women who are having their first baby will experience what is known as lightening. This is the slipping down into the brim of the pelvis of the baby's head. The chin becomes flexed upon the breastbone and the back of the head or occiput slides downwards into the birth canal. The change is often felt in the abdomen. The uterus appears to have dropped and, not infrequently, a woman will comment upon the added freedom of movement and deep respiration. The birth of the child may usually be expected within ten days or a fortnight of this change. With second and subsequent babies this does not always occur and not infrequently in the easiest births the head will remain quite high in, or even above, the pelvis until well on in the second stage of labour, which will be explained later.

A woman should have knowledge of these events, not only because they are evidence of her progress, but they make her realise how quickly the weeks pass and thereby she is encouraged in patience. It should not be overlooked that the last two or three weeks of pregnancy are a very severe strain upon the patience of a woman, not only because she is looking forward to her baby but because she may well be tired of the limitations of her movement and the exaggerations of her contour.

It will not be out of place to call attention to certain changes that a woman is likely to experience in her mental attitude towards pregnancy as the weeks advance. There is no reason why she should not live an ordinary life. Her medical attendant will pay attention to the extra weight that is normally acquired as the child grows.

After the first excitement of the knowledge of pregnancy, about six weeks, a woman may have a variety of

emotions which swing like a pendulum between happiness and depression, but it is not unusual for her child to remain a very impersonal responsibility until she feels it move. It is the first recognition of the individuality of her baby and there is a natural tendency at this time for her mind to be deflected from many of the less important thoughts about herself to the more important considerations for her child. It has been wisely said that at the quickening of the first baby the maternal mind is born.

From twenty weeks onwards more care will be taken for the baby's sake. Those who are undergoing training and education will concentrate more seriously upon their exercises, relaxation and diet. They will read with avidity such information about the natural processes of childbirth that they can obtain. By thirty to thirty-two weeks their thoughts will have turned towards preparation for the baby in the more practical way. Its clothing, cot and pram, the nursery necessities, as well as the frills and furbelows that please the feminine eye, will occupy her attention. There is no need, however, to alienate herself from her former interests and occupations and it is unwise for a woman during the last two or three months of pregnancy to retire from social life. The boredom of the last three weeks has already been mentioned, but with understanding, patience and self-control, time passes rapidly on to the commencement of labour.

The Signs of the Onset of Labour

Two hundred and eighty days is an arbitrary figure only and a baby may be full time and quite normal if it arrives at any time between 270 and 290 days. It must not be thought, therefore, that a baby born ten days before the expected date is necessarily premature, or ten days after is post-mature. A woman under my care had all three of her children on the 300th day from the

first day of her last menstrual period. She had very easy labours and there was no evidence that any of the children were overdue. When a baby is ripe and ready labour will commence. There are many reasons why it should not be brought on early and the indications for this interference are very definite.

There are three signs that labour is imminent.

1. *Rhythmical Contractions of the Uterus.*

These are felt as sensations of tightness in the abdomen. The uterus becomes hard and the feeling spreads all over the organ. It is not uncomfortable. The importance of this sign is the RHYTHM and not the contractions. A pregnant woman may have definite contractions for some weeks before her baby is due and these are sometimes more uncomfortable than labour, but, if a regular and continuous rhythm is not established, they do not indicate the onset of labour. True labour contractions may start one every ten or fifteen minutes, or even at longer intervals, but gradually the interval decreases, until they come on every three or four minutes. As soon as regular RHYTHMICAL contractions are established she should go to the place where her baby will be born. If it is to be born at home and the nurse is not with her she should be sent for at once.

2. *The Leaking of the Waters.*

Sometimes the " bag of waters " in which the baby lives leaks or ruptures before the uterus starts its rhythmical contractions. This happens more frequently with the second or subsequent babies than with the first. This is recognised by a flow of water, which may vary in volume, over which there is no control. When this occurs the woman should go immediately to hospital or send for her doctor, particularly if it has come on with a sudden rush. It is wise under those circumstances to lie down immediately with the buttocks raised on pillows. Rhythmical contractions may start in an hour

or two, or they may not commence for two or three days, but it is an indication that labour will soon be established and it is wise, therefore, to be under expert observation.

3. *The Show.*

This usually comes on after uterine contractions have commenced and the neck of the womb has started to dilate. It is slightly blood-stained mucus and is positive evidence of the onset of labour. If there is any appreciable quantity of blood, without mucus, the doctor should be informed at once.

These three signs, which can be remembered by the initials of the famous author R.L.S.—the RHYTHM, the LEAKING and the SHOW—should be clearly imprinted upon the mind so that no anxieties or doubts persist about the onset of labour.

The Three Stages of Labour

The course of labour is divided into three stages:
First stage: The dilatation of the cervix of the uterus.
Second stage: The expulsion of the baby from the mother.
Third stage: The separation and delivery of the placenta.

The First Stage of Labour

Once labour has commenced there must be no delay in starting for the hospital. "Plenty of time" should be the motto, born out by women, with no flurry or anxiety. There will be excitement and relief that the day has come. That frame of mind should be preserved. The arrival at hospital should be a cheerful event and the Sisters who greet patients know the value of maintaining an atmosphere of cordiality and confidence.

The preparation for labour which is carried out on the arrival of the patient, consists of a hot bath, an enema

and either complete or partial shaving of the pubic hair. Blood pressure will be taken and a specimen of the urine tested. The baby's heart will be listened to and its position determined by examination of the abdomen. When this has been done the parturient woman is taken to the first stage labour room.

In some hospitals several women are left together in the first stage. This is to be deplored. On a visit to a certain country in Europe I was shown, rather proudly, a first stage ward where there were nine patients. When I went in with the Professor who was conducting me round there was no nurse present. We walked amongst the patients and I noticed that three of the nine were already in second stage. They all thought their neighbours were suffering most intense agony and when kindly spoken to they nearly all expressed sympathy with others. Only one demanded sympathy for herself because of her own personal discomfort. This distressing scene impressed me with the fact that antenatal care was at fault more than labour. Had these women understood labour, learned and practised what to do and been helped by one trained attendant, it would have been so different. When women properly prepared for natural childbirth are in labour together they help each other in many ways, not hinder by mistaken sympathy.

When the first stage of labour is well established a woman should be in a room with a nurse in frequent attendance. The companionship of her husband is invaluable to her if he is a level-headed and understanding man. It is one of the desirable aspects of domiciliary midwifery. In hospital, however, these conditions can rarely obtain, but when several women are in labour together much distress may be obviated if they have had adequate antenatal instruction and if the hospital has a specially trained staff to care for parturients.

As rhythmical contractions of the uterus increase in intensity, gradually dilating the cervix, there is a demand

for patience. These contractions may go on for twelve or twenty hours. If the training that has been given in deep respiration and complete relaxation is well and truly carried out, this period of waiting is very much less strain upon the woman's mind. The routine of becoming completely flaccid at the onset of a contraction enables her to improve this technique as time goes on. Many women read or sew between the contractions.

Care should be taken that adequate nourishment is given during the first stage of labour. Some patients are willing to eat a light meal. Others prefer a glass of milk, a glass of orange juice, or a cup of tea, but it is a great mistake to leave a woman for ten or twelve hours without adequate nourishment. She is doing hard muscular work during this time and requires fortification, as we all do when we are occupied with physical exercise.

The First Emotional Menace of Labour

When the opening of the cervix is about 2 inches or 5 centimeters in diameter, a series of new sensations will be experienced, which require explanation. It is not a question of physical pain that arises, but most women are subjected to an emotional attack. They wonder if they can possibly carry on. They feel the strain of labour and there is an added difficulty to complete relaxation.

This is termed the first emotional menace of labour. It necessitates understanding and self-control, which should be imparted by a nurse or medical attendant who recognises the importance of this change.

There are some women who find very great difficulty in overcoming this phase and become restless and, by their inability to relax have a certain amount of real discomfort. When this occurs a woman should be given some form of sedative to tide her over. It is the ideal occasion for 100 mg. of pethedin to be administered.

Whether with or without this assistance, and in practice one finds that about one in five women do better with such assistance, a calm and purposeful attitude towards labour results in an hour or two. The contractions have become stronger but the ability to relax improves—and so the first stage goes on, but no woman should be left alone and told to get on with it by herself. A word of encouragement or explanation during this phase of labour is of the greatest help and should never be withheld. In fact, I go so far as saying that during and for an hour or two after this first emotional menace no woman should ever be left alone. Loneliness is a cruelty only inflicted in ignorance of its severity. Not infrequently the presence of a woman's husband at this time, if he has been interested with her in the preparation for labour, as many are, has a most beneficial influence.

Just before the cervix is fully dilated, that is to say stretched wide enough to allow the baby to pass through into the vaginal end of the birth canal, certain changes occur. The ultimate stretching of this rim of muscle tissue at the outlet of the uterus, in about 50 per cent. of women, gives rise to a backache over the sacrum or bottom end of the spine. The pain is caused by stretching, but is felt as backache. Such an ache is relieved by firm pressure of the hand of an attendant, or some women prefer slow, heavy rubbing over the lower back and sacrum.

It is not unusual for a woman to vomit during the latter part of the first stage of labour. This unpleasant and sometimes distressing incident is the rational preparation for muscular effort. It is influenced to some extent by nervous reaction to changing events. Under all circumstances nature demands an empty stomach before violent physical exertion.

The Second Emotional Menace of Labour

This discomfort is accompanied by a second change in the attitude of the woman towards her labour. Not infrequently it is the first time that she has been aware of any physical uneasiness and it awakes in her mind many fears lest this backache will resolve into a more severe pain. Fear definitely assaults the minds of many women just before full dilatation of the uterus, which is known as the second emotional menace of labour.

This backache, however, only persists for about nine to twelve contractions. A woman should be informed of that, for a temporary discomfort is much more easily borne than one which is likely to persist. She should also be told to concentrate upon the depth and rapidity of her breathing. It is possible to relax efficiently in spite of the fact that respiration is quicker and deeper.

The Transition

As this transition from the first to the second stage of labour develops it will be noticed that a slight hesitation in expiration occurs. A catch in the throat—hôquet de larynx, as the French call it. On an occasion when I was demonstrating this at a French University my colleague used the word " hôquet." It does not exactly describe what goes on, as it is more literally translated hiccough. But, when he turned to me and questioned " Hôquet ? " for the moment I mis-translated into American what he had said, the pronunciation being O.K. Since this incident has been related in many places, certain Medical Schools in England, and elsewhere, term this occurrence the " O.K." and it conveys very adequately that all is well, the second stage is about to commence and the long patience and self-control of the first stage are at an end.

This catch in the throat is the first evidence of the irresistible desire to bear down and push the baby from

the uterus. After three or four contractions, when a deep breath is taken, the larynx closes, the woman holds her breath and pushes down, using the same action and muscles that she would use if passing a motion, *but she should never bear down until she is unable to avoid it.*

The Second Stage of Labour

When the second stage is established a woman not only gives the appearance of, but often expresses, great relief. She is now able to help. Her backache has disappeared, things are getting on and soon, in an hour or two, as she should be told, if she works with a will her baby will be born.

The routine of her labour changes. She should not be allowed to push violently at first, but merely to hold her breath and exert a little pressure with each contraction. It is a great mistake to wear a woman out with violent muscular effort in the beginning of the second stage of labour. The uterus will do its work perfectly well with the minimum of assistance.

These contractions require physical effort, therefore it is obvious that relaxation with the contractions must now be discontinued. Immediately a contraction has ceased she should rest in a position of comfort, preferably on her back, close her eyes and take two or three deep breaths and become completely relaxed *between* her efforts. They may at first come every five or six minutes, or even at shorter intervals.

After ten or twelve contractions it will be observed that she becomes very drowsy between them. This state of amnesia, as it is termed, is Nature's anæsthetic, not for the purpose of taking pain away, because very few women have any physical discomfort at this phase of the second stage, but it appears to be the means by which a woman's mind and body are completely rested—a condition in which the body can recuperate with great rapidity between its violent efforts. She is thereby

prepared for each succeeding contraction without becoming exhausted. It is essential therefore that absolute quiet is maintained in the labour ward. Inconsequent conversation between attendants, clumsy movements, heavy footsteps and banging doors are unforgivable sins in the presence of a woman advanced in labour. Many women sleep, whilst others remain quietly insensible of their surroundings. Sometimes it is difficult to make them understand what is said without speaking loudly into their ears. Their nature changes and many incidents of almost asocial behaviour have been recorded. Their expressions are not always delicately made and this is probably due to the fact that the amnesic state lowers the discretion and discrimination of a woman, in the same way that it lowers appreciation of the immediate surroundings.

The Third Emotional Menace of Labour

The head advances through the birth canal and after a time reaches the muscles which form the floor of the pelvis. This gives a sensation of internal pressure. Some women have described it as resistance and it is the third occasion during labour when there is a definite wave of fear and exasperation in a large number of women. It is at this time, when the baby's head may be only 1 inch from the outlet of the birth canal, that many women become frustrated and disappointed with efforts that they feel are of no avail. It is so marked that it has been termed the third emotional menace of labour.

The desire to escape, very largely exaggerated by the absence of discretion, may be easily misunderstood by those who have not examined this phenomenon closely. When a woman desires to escape from anything that she does not wish to experience she may use all manner of wiles to obtain her object. Many will complain of agonising pain whilst their pulse remains at 70. Many will ask for anæsthesia, not for pain, they will explain,

but because they have " had enough." Some will say that they are completely exhausted and cannot possibly go on—" Will you please help me." On occasions the attendant obstetrician will be told exactly what his patient thinks of him !

Great care is needed on the part of the attendant not to be misled by emotional exhibitions and not to mistake them for physical discomforts. Severe physical discomfort at this phase of the second stage of labour is extremely rare in a normal presentation of the child. This has been told me after labour by a large number of women. Several women doctors, who have had their babies and observed the processes of physiological labour closely whilst they have been experiencing them and communicated their sensations to me, have explained afterwards that in their opinion the most terrifying part of labour was the uncontrollable desire to escape at this third emotional menace. One went so far as to tell me that I had not emphasised sufficiently the importance of this incident and that, in spite of my reassurance, she had considerable difficulty in accepting, at the time, the advice I gave her.

Now, this threat to a woman's self-control is in no way difficult to overcome. The method is that at the next contraction she should be told to concentrate and push as firmly as she can, for immediately she exerts the maximum pressure all discomfort ceases and confidence is restored at once. The third menace of labour is negligible if it is met with a combative determined effort, for once the pelvic floor is adequately distended the head rapidly passes down to the vulva.

It is usual that the membranes, that is, the bag in which the waters are contained, have ruptured before this time. *A woman should be warned always of this event* because many have been alarmed by the sudden and unexpected flow of a large amount of water.

Crowning

As the head comes down on to the vulva it becomes visible and the patient should be told that the baby can be seen. This is a most encouraging moment, but she should not be told it will be there in five minutes. It may take half an hour for a baby to be born after the head is first seen at the outlet, particularly if it is a first baby.

The contractions now should be used fully. When the vulva is dilated to about 1½ to 2 inches in diameter the woman will feel the outlet stretching. This is natural because the opening has to stretch. The sensation is one of burning and may become acutely uncomfortable if not properly managed. All efforts to bear down should be stopped. The uterus, of itself, will slowly urge the child forward and during contractions the woman should be told to breathe in and out deeply. It is a comforting dispensation of Nature that the pushing reflex can be overcome voluntarily at this stage of labour and a woman can breathe freely without giving way to the urge to bear down.

In this way the vulva is gradually distended—and it should be distended gradually without any violence, for tears of the skin and even of the muscles are frequently produced unnecessarily because a woman is encouraged to bear down violently. As soon as the vulva is nearly fully dilated it loses the sensation of burning and becomes quite anæsthetic, which not infrequently results in a woman being unconscious of the birth of the baby's head.

The Fourth Emotional Menace of Labour

The stretching of the vulva constitutes another phase which demands self-control on the part of the woman. Many feel that they must inevitably burst or tear and, in an effort to prevent it, will actually endeavour to

contract the muscles of the pelvis in resistance to the oncoming head. It is rightly termed the fourth emotional menace of labour, and it is the self-control of the woman that demands the obstetrician's attention, as well as the conduct of her labour.

When the baby's head is born there is a pause. It may cry before the shoulders arrive. With the next contraction, which should again be completely controlled, the attendant may require gentle assistance from the woman and he will invite her to bear down. There is very little, if any, discomfort in a properly conducted physiological labour during the delivery of the baby. There is discomfort if there is any hurry or if the woman is allowed to lose her self-control, which she may well do if not adequately instructed.

The Third Stage of Labour

The child is born and cries vociferously. It is my habit to lift it up so that the mother herself may tell whether it is a boy or a girl. Not infrequently she has held the baby's hands before the body has been expelled. At the sight of her child she becomes an entirely different person. The amnesia has gone. Her happiness and the expression of delight is so dramatic that the birth of the child, which is the change from the second to the third stage of labour, has been termed the *stage of transfiguration.* It is impossible to describe adequately how women feel or look at this time. The presumption of exaggeration is almost justifiable to those who have not witnessed it. The words and expressions and actions of a young girl who takes her baby in her arms immediately the umbilical cord is divided are an exhibition of complete and careless ecstasy.

There is a purpose in every natural phenomenon that occurs during labour. This joy is not only the first flood of maternal love but, in the more banal sense of physiological reaction, it causes a violent contraction of the

uterus, it prevents any excessive loss of blood from the site of detachment of the placenta and hastens the expulsion of the afterbirth. As a mother fondles and toys with the fingers of her child the great muscular organ is a hard solid ball of safety within her abdomen. I say " of safety " because from the obstetrician's point of view, should he have an anxious moment, it is when the uterus during the third stage of labour is flaccid and will not contract upon the afterbirth.

In the third stage of labour many women have violent shivering attacks. This is alarming if not explained to them. It is the natural method of replacing some of the body heat lost when the liquor, or baby and placenta, have left the mother's body. It is equivalent to shivering when we feel cold, which is an effort to produce the maximum warmth with the minimum exertion. Shivering experienced earlier in labour is a nervous reaction to emotional states causing cold sensations and excessive tensions. It rarely occurs in a relaxed and controlled woman.

After a few minutes the child is placed in a warm cot beside the mother's bed. The mother is given a hot drink, preferably of glucose and water. After, maybe, ten minutes she will feel again gentle contractions of the uterus, or indeed the uterus may contract firmly without her being conscious of it. The attendant will know when the placenta has passed from the uterus into the vagina and, about twenty minutes after the child is born, the woman may feel a definite desire to bear down and extrude the afterbirth. This is not done by the attendant, as it used to be years ago, for there is no necessity to help the uterus, unless it is to place a hand on the abdomen and give the woman a sense of something to push against. Even this is not necessary, but tradition and custom die hard.

It should not be overlooked that many women believe the delivery of the afterbirth to be an event of considerable severity and discomfort. Therefore the care of a

woman's mind during this twenty minutes or so is important. After a natural birth the attendant may be carried away by the atmosphere of happiness radiated by the mother, but the emotional changes of the third stage are quite definite and conform to a miniature labour. The reaction to the first exhilaration may occur with the re-establishment of rhythmical uterine contractions. These are accompanied by slight drowsiness which is disturbed by an irritated attitude towards the unexpected anti-climax of the recurrent uterine activity. The re-establishment of the expulsive reflex is received with satisfaction and success of the ultimate effort, a long persistent bearing down as the spongy mass is extruded, is greeted with a sigh of relief and a feeling of final achievement. The delivery of the placenta is the end of labour.

The Placenta or Afterbirth

The placenta is a spongy soft organ and varies in size with the weight of the child. It is usually oval or circular in shape, from 6 inches to 9 inches wide and about $\frac{3}{4}$ of an inch deep at the centre, thinning off at the edges. The average weight is about 1 pound. It folds very easily to the shape of the birth canal and is passed without any difficulty.

Many women ask to see the afterbirth as they have become interested in their study of childbirth. There is no reason why this request should not be complied with and, if it is placed in a bowl, having been rinsed, the membranes, the cord and the surface from which the child's food has been filtered may be demonstrated. Some women have no desire to look at it.

The Repair of the Perineum

If there has been a small snick of skin which the obstetrician considers will heal better with a single

catgut stitch it is not a matter for concern and, undoubtedly, a large number are repaired which in reality would heal quite well without attention. But, if one stitch is required it can be inserted immediately after the baby is born and whilst the perineum is still numb with the minimum of discomfort to the woman and without any anæsthetic. If, however, this is delayed for more than a quarter of an hour then some local anæsthetic, such as 1 per cent. novocaine, should be injected into the area through which the catgut ligature is passed. If a more extensive repair is required the routine procedure of the attendant obstetrician will be adopted.

The nurse then swabs carefully with an antiseptic the vulva and perineum and a sterile towel is adjusted to receive what is known as the lochia. So labour ends and the woman is returned to her bed, where she should be given a cup of tea and visited by her husband. Then the wife should be made comfortable to rest from her exertions.

Aspects of Labour from the Woman's Point of View

There is a general trend to mechanise childbirth and for that purpose the use of ansæthesia in some form or other is necessary. Let it be examined from the point of view of the woman herself.

Does a woman, after nine months of proud and happy pregnancy, want to be oblivious to her baby's arrival into the world ? A healthy-minded mother naturally desires to be conscious of her child's birth. She intends to work hard for it and realises that the best things in life are not presented to an effortless person in an armchair. The infant who has kicked and rolled within her for many weeks becomes the centre of interest. Does she really believe that the ultimate achievement of this glorious episode is designed by Nature to be so painful that it cannot be endured in consciousness ?

For generations women have been frightened about

childbirth and probably nothing is more likely to increase their fears than the attitude and behaviour of many who attend them in labour. The majority of women, until a few years ago, believed in pain and, therefore, had no hesitation in persuading others to do the same. Few human beings can be called upon to face pain without any fear. And yet, it is extraordinary that so many women, who feel instinctively there is something wrong in this teaching, are willing to sit back and accept as a fact that the most wonderful of all natural functions was so designed that the reward of mother love and care was suffering and danger.

There is no evidence whatever that physiological labour should be any more painful than any other natural function. Nothing is known about the Creative Genius which fashions and moulds new life, yet woman is told, with great authority, that the creation is all right but the Creator's devices for the birth of the child are less satisfactory than man's contrivances.

Women are very intelligent in many matters, but inherently so in relation to their own babies. In their minds they realise that motherhood is a Holy Estate and not a purely social acquisition. Throughout the ages it has been depicted and reverenced by man as the nearest approach of the human to the divine. Yet to-day science demands that women submit to a contemptuous scorn for the procedures of the God of Nature and sacriligious interference with His most marvellous designs. They yield to persuasion against their instinctive sense of right, or indeed, should they remonstrate, they may be forced to do as they are told, with dire threats of the consequences of rebellion. All this in spite of the vast and ever-growing fund of evidence that normal childbirth need be neither painful nor dangerous.

Is modern intelligent woman still willing to be tampered with and humiliated ? Surely she is not too nervous to demand what she wants and believes to be right. Is there no sense of shame in the ignominy of

lying, powerless and paralysed, whilst her baby is extracted by instrumentation? She may have been told it was the safest way, or that she could not deliver it herself and that, since she was conscious of what was happening, her future mental health would be unimpaired. This may herald the dawn of understanding, inasmuch as her mind is considered, for only a few years ago attendants at labour had to be reminded that there was a woman at the other end of the subject of their interest.

A declaration by a leading gynæcologist was recently published. "Statistics prove that low forceps delivery early in the second stage of labour is the safest way of delivering a child." This is one of the most disgraceful statements that any scientist could have the effrontery to publish. It is ignorance inflicting cruelty upon the even more ignorant.

There has recently been an outcry in political places that no woman should be aware of the sensations of childbirth. This trading upon the untutored minds of the people for purposes of either popularity or votes, is beneath contempt. Since when has unconsciousness become the only clue of the "humanitarian" to kindness? Women should not be hood-winked by people who claim their respect and confidence. They should be told the facts plainly and clearly. The best and safest way to have a baby is physiologically, *i.e.*, according to the natural law by which the Creator brings new life into the world. The ethical or philosophical views of women upon the forces of creation do not alter that law. Most distinguished scientists recognise that there is a Power greater than man. This heresy may eventually spread to gynæcology and even to its Cinderella sister-science, obstetrics! Any interference with the natural forces of childbirth means risk of injury, either to mother, child, or both. The mental and physical assets of the individual are jeopardised. There is no justification for the high-handed imposition of danger in the

name of science. The misuse of benefits is as great an evil as the failure to use them.

The Discomforts of Childbirth

We have to recognise that in spite of all the advances made in various branches of Medical Science far too many women are allowed to suffer pain in childbirth. This is not due to any inability to prevent it, but to the absence of an energetic effort to organise the means of relief which women are justified in demanding. This should be more clearly explained so that some of the difficulties of pain relief are understood.

Pain cannot be defined. It is one of the most complicated phenomena in Nature. Its purpose is to protect from injury. It is a combination of a variety of causes and has been the subject of investigation, research and controversy since the earliest days of medical science. But, all that matters to a woman in labour, is that pain is extremely displeasing and disconcerting and she desires to be freed from its torments.

In childbirth there are two types of pain—each of which requires a different method of treatment. One is unavoidable, accidental and relatively rare. The other is avoidable and relatively common.

The first arises from abnormalities in the mechanism of birth, which require interference to rectify. This is true primary pain.

The second arises from the emotion of fear, which is the other great protective device of nature. This may be called secondary or psychosomatic (mind-body) pain.

Fear has two serious effects upon labour.

(*a*) It causes tension in certain muscles and thereby creates resistance to the opening of the cervix of the uterus and to the expulsion of the child. This results in pain, in the same way that any muscle that continues to act against resistance becomes painful.

(*b*) Fear acts in the brain as well and exaggerates the

sensations of labour out of all proportion to their real intensity.

Thus we see that fear causes tension and tension causes pain. This F-T-P syndrome, as it is called, is responsible for nearly all the discomforts of normal labour. It is a vicious circle, for the increase of any one of them magnifies all three.

Women must understand this simple aspect of the Pain of Labour. To avoid pain—fear and tension must be overcome. Fear fades before the confidence that education in the processes of labour gives. Tension disappears as a woman loses her fear, and she can materially assist in its release by the practise of relaxation. A few simple exercises to promote respiratory efficiency and control, combined with others to prepare the muscles and joints for the exertion of labour, not only make women physically fit for the task, but give them confidence and an enhanced ability to relax.

In this manner, records show, 70 per cent. of women have so little discomfort in *normal* labour that they decline to have either drugs or analgesics, but prefer to witness and experience the greatest and most satisfying achievement of their lives. Twenty per cent. had a sedative or anti-spasmodic drug given, 8 per cent. took a " self-administered " analgesic, or asked for it to be given, and 2 per cent. only, owing to emotional breakdown, wished to be unconscious when the baby arrived. Therefore in 98 per cent. of normal labours—in the series quoted, which was over 400 consecutive births—the mothers were conscious of the varying sensations of parturition, without discomfort that demanded relief when their babies were born.

The safest and most effective way to minimise the discomforts of childbirth is to enable woman, by preparation for, and understanding attention at labour, to have her baby naturally.

We do not expect all women to be either psychologically or physically capable of carrying out a natural process. Some are not able to absorb instruction, others

are not adequately instructed. Some have neither patience nor self-control and others are emotionally unstable. Therefore provision must be made for the immediate application of pain-relieving measures, should any of these conditions prevail.

The Relief of Pain and Distress in Labour

Deep anæsthesia is induced when complications or difficulties arise which necessitate interference for the safe termination of labour. This not only applies to mechanical or chemical abnormalities, but also to severe emotional disturbance. This condition, if allowed to persist, may have serious consequences upon the mother and the child and therefore, although it should seldom occur, it must be treated as an emergency.

When deep anæsthesia is required a skilled and experienced anæsthetist should be called in. This service is particularly important in obstetric operations, the success of which frequently depends upon the depth of anæsthesia at different stages of the treatment. The reagent to be used must be carefully selected after consultation between the obstetrician and the anæsthetist.

Analgesia does not relieve severe physical pain, which is associated with the conditions mentioned as indications for anæsthesia and unconsciousness. The milder inhalants, such as nitrous oxide gas, or trichlorethylene, are used to relieve pain resulting from the influence of fear and tension in an otherwise normal labour. By their administration the senses are numbed and the pain-causing tensions relieved. That is why a woman's distress may be assuaged by a few whiffs. Very light analgesia releases the tensions of labour and disposes of exaggerated interpretation of sensations in less than half a minute.

Psychosomatic pain manifestation can be dispelled by analgesics without the complete loss of consciousness,

but the relief of primary physical pain, such as that which results from obstructed labour, demands deep analgesia or anæsthesia and complete loss of consciousness.

Analgesia should always be available in case a woman's fears get the better of her and her self-control wavers. Its use for a short time, especially at the transition from the first to the second stage of labour, will frequently restore a woman's confidence, so that she willingly puts it aside and completes her labour naturally.

Such analgesia for short periods is the least harmful method of restoring confidence and releasing tension. If, however, too much is given or it is continued too long, risks are incurred both to the mother and the child. The first and most important of these arises from the urge to interfere with her labour in order to hurry the birth of the child. The second is the tendency of the uterus to remain flaccid after the baby's arrival, which may result in excessive hæmorrhage. The third is the influence upon the baby's breathing. All analgesics given deeply or for a length of time depress the respiratory mechanism of newborn infants. Not infrequently there is considerable difficulty for several minutes in persuading them to breathe. This inhibition of respiration, particularly if combined with an instrumental delivery, may result in serious injury to the baby and its future well-being.

The majority of women in normal labour seek relief from their fears, which they interpret as pain. The importance of maintaining confidence, therefore, cannot be over-estimated, for it will minimise the amount of analgesic necessary.

Antispasmodic drugs should be used in the first stage of normal labour, when self-control and faith are shaken by the onslaught of fear. The reaction to the menace of this powerful emotion varies as the ability of the woman to implement her antenatal instruction and to retain her self-control. But, pethedin or some similar antispasmodic should never be withheld if a woman is distressed.

A well-timed exhibition of such a drug is rarely dangerous to either mother or child and the restoration of confidence and self-control frequently allows an undisturbed and natural conclusion to labour.

Sedatives are given to women in order to make them rest peacefully or sleep during the long hours of the first stage. No woman should do without sleep for fifteen to twenty hours under these circumstances.

Caudal Anæsthesia and Sacral Block. One other method of pain relief must be mentioned, because it has gained a considerable degree of popularity in America during the last nine years. It is induced by deadening certain nerves in the pelvis with injection of anæsthetic reagents. When this method is completely successful in the hands of a highly skilled performer it has certain physical advantages, but it has disadvantages which are such that it is unlikely to find a permanent or general place in normal obstetrics. It requires the constant attention of a specially trained and efficient staff, not only whilst it is being administered, but also after the baby is born. More than half, and in some hospitals nearly 100 per cent. of babies have to be extracted with forceps. Apart from physical injury there are serious risks to the mental processes of a woman who, although conscious, does not feel the sensations of childbirth. When she hears the first cry of her baby the normal flood of mother love is restricted by the absence of the pride of personal achievement. She has a sense of failure and resents the fact that she did not take an active part in its birth. During the months succeeding labour frustrations and conflicts may develop in her mind which disturb the foundations of harmonious mother-child relationship.

Obstetricians quickly lose sight of the majority of the mothers and babies they attended during labour. This procedure to destroy the sensations of normal childbirth, lest they *might* become uncomfortable, is quite unjustifiable from the woman's point of view. It is an injurious indignity to which no woman should be

subjected in order to satisfy the " one line " enthusiasm of scientists. The answer to this new method is the same as to others. All women should be educated, prepared and assisted to have their babies naturally. Only a small percentage of them will require interference with these psychological and physical functions.

That is the correct use of anæsthetics, analgesic drugs, etc., for the relief of pain in labour. They should not be exhibited as a recognised routine, but only when adjudged to be indicated by clinical observation and experience of signs and symptoms. Make it the first principle that although labour is a clear test of a woman's self-control it should not be made an ordeal if that quality is wanting and no discomfort greater than she is willing to bear should be allowed to persist for one moment longer than its relief requires.

We neither agree nor sympathise with those who believe that Nature intended a woman to suffer, and who state that through suffering their love for their children is magnified. Whether this belief is supposed to be for the good of the mother's soul or the coffers of her ethical advisers is debatable, but when considered in terms of physiology, biology or philosophy, there is neither justification nor sense in this attitude, and nothing will impress the truth upon a dissentient with greater force than to witness the natural birth of a child.

AFTER THE BABY IS BORN

After Pains

Women who have had more than one baby may have painful contractions of the uterus for the first day or two after the baby is born. Sometimes they are very slight and occur in particular when the baby is put to the breast. This is due to a reflex stimulation of the uterus from the breast, which makes it contract tightly during

suckling. If the pains are more severe it probably means that there is a small blood clot or piece of membrane which has not come away from the uterine cavity. This condition can be rapidly cured by giving a teaspoonful of liquid extract of ergot every four hours, for three doses, or by giving an injection into the muscles, of ergometrine. In my experience 50 mg. of pethedin, followed by two tablets of aspirin four hours later, usually acts like a charm. Many women resign themselves to after pains, which is wrong. They should say immediately if this discomfort arises. There is no reason why they should not be relieved of it very quickly.

Lochia

For a fortnight, or even longer, after labour a discharge persists from the genital canal. It consists largely of thin blood with a few small clots and, in three or four days, turns to a brownish colour, which colour gradually fades until the process ceases. This comprises to a large extent the debris of the uterine and vaginal walls as they cast off those membranes and tissues which were of service during pregnancy and parturition. It necessitates frequent regular swabbings and cleanings during the day and the wearing of sanitary towels, but should occasion no more discomfort than rather prolonged menstruation.

The Care of the Baby

There has been a good deal of misunderstanding during the last few years of the relationship between a mother and her newborn child. If we consider a few of the more important aspects of this we shall be able to draw our own conclusions as to what is the best method to adopt. A newborn baby remains part of its mother just as much after birth as it was whilst *in utero*. Indeed the added association of personality and behaviour brings them even closer together.

When a baby is born it is equipped by nature with the means of survival in relation to its mother. It has a mind of its own, thoughts and an awareness to changing circumstances. In the absence of experience it does not interpret incidents in the adventure of living with adult understanding. Its physical demands are for food, warmth and rest. Its awareness to things and people about it rapidly develops and within a few hours of birth it seeks security in the widest sense. In the early days of a baby's life security implies the provision of the essentials for survival and protection from outside injurious influences. For that security a newborn baby turns to its mother.

When we think of these matters we must realise that the mind of a child when it first arrives in the world has neither values nor experience. Its mental activities are largely stimulated by its physical demands for survival.

Another aspect of the mother-child relationship is that a mother should have every opportunity of getting to know her baby, its habits, its desires, its method of communicating those desires to her and the demands it makes upon her for food, warmth and security.

It is customary in many maternity hospitals for the mother to see her newborn baby only when it is brought to her for regular hour-spaced feedings. In some places she is not allowed to hold her baby after it is born, or when she recovers consciousness from the anæsthetic that she may have been given. This does not establish a sense of security in a newborn infant's mind. Neither does it satisfy its demands for food when hungry. The importance of this is seen in later life and not infrequently in the behaviour of the child during its earliest weeks.

A change is rapidly sweeping through the hospitals for maternity. When a child is born the mother holds it and fondles it immediately and some mothers have a wish to put the child to the breast. This initial contact

of warmth and care between the mother and the child has a most salutory influence upon the behaviour and progress of both of them. After the mother returns to her bed from the labour ward the baby is placed in a cot beside her. Having the knowledge of her child's presence she does not worry about it. She feels that her child is secure. Many mothers suffer silently acute anxiety for the welfare of their babies during these first three or four days of life if the baby is in some place apart. The nurse will take the baby to the nursery to change its nappies and to oil its skin, for newborn babies are not bathed with water and soap for the first few days, and the child is then brought back to the mother.

From time to time the restlessness of the child or its cry may indicate its desire for the breast and the mother feeds the child on demand. She replaces it in the cot by her bedside and it is interesting that children treated in this way are peaceful and quiet and, during the day, very rarely disturb their mothers by crying, but on the other hand she sleeps with the utmost satisfaction because of the presence of her new possession.

After the baby has been put to the breast it is held and cuddled and made familiar with the mother's ways, whilst the mother herself becomes familiar with the ways of her child. When a mother cossets and coddles her baby as it nestles and nuzzles in her arms, she unconsciously lays the foundation of that mutual confidence and companionship from which all that is best in human nature develops. She soon learns what its different cries mean, if indeed such babies cry for any other reason than hunger. She acquires a confidence in her ability to care for the child. She gets to know it and the close attachment is the greatest possible stimulus to the early and efficient establishment of breast feeding. It may be well for the first few nights that the child sleeps apart from its mother, should she be wearied by her labour and require unbroken rest.

This so-called " Rooming-in " method of establishing

the mother-child relationship was practised up to fifty years ago and the conformity to rigid regulations has been necessitated by the manner in which maternity hospitals are organised. More women have their babies in hospitals to-day and it is undoubtedly, under modern circumstances in most countries, the wisest course to adopt, particularly with first babies. (For over twenty years I have insisted, where possible, that the baby should be with its mother from birth. The results have been most satisfactory.)

There must be variations in the extent to which mother and child may be together. Some mothers do not take kindly to this arrangement, whereas others can hardly bear to have the baby out of their sight.

It is not necessary here to explain in detail the psychological advantages as well as the physical advantages to both mother and child, but an assurance can be given that full investigation of this matter has brought to light evidence which strongly suggests that disturbances of the mind arising from deeply-rooted frustration are caused by the separation of mother and baby during the first few weeks. Later in life physical disease is traced to these early and original causes—such as bad digestion, diarrhœa, constipation, and even mannerisms and habits which are undesirable in children.

It is not correct to say that the presence of a baby is disturbing to a mother and does not enable her to have sufficient rest. The baby that is " roomed-in " with its mother is very rarely restless and the mother that is with her baby is almost invariably at peace with herself and the world.

There is no doubt about the advantages of feeding on demand, for the routine of putting the baby to the breast every four hours is neither natural nor physiological. If a child is hungry after three hours it is probably too angry to feed properly by the time four hours have passed. If it is being fed three-hourly its return to the breast may be before it has established a

hunger. It will not therefore feed properly or take sufficient. Such babies frequently show signs of restlessness, and play with the nipple, causing mental irritation and physical discomfort to the mother. This disinterested suckling frequently causes sore or cracked nipples. When the hunger wave does come on about an hour after its ineffective effort to feed, the natural demand for food is not satisfied and the child suffers the pain of hunger and cries until the clock reaches the next appointed hour.

Much crying in a frustrated baby is undoubtedly a greater evil than has been recognised in the past. Violent crying does deprive a child's brain of the full quota of oxygen that it should have in a state of rest and peace. Many children cry very violently when they are annoyed by not having what their body obviously demands and these fits of irritation can definitely do harm, not only to the child's nature, but to its physical and mental development.

After a few days a mother can feed her baby when it demands food without calling on the nurse and, where rooming-in is adopted as a routine, the work of nurses is actually less than where feeding by the clock is established. The advice therefore is that if your baby is born at home see to it that you establish the close relationship that is so easily possible during the waking hours. If your baby is born in a hospital it is hoped that it will be a hospital where the practice of rooming-in is efficiently carried out.

Preparation of the Breast for Feeding

The breasts should be prepared for lactation from the eighth month onwards, which is about the thirtieth week of pregnancy. They should be gently massaged with lanoline or olive oil every day, the rubbing movement being made from the chest wall towards the nipple. These movements are slowly and gently carried

out. This increases the circulation and improves the breast tissues, so that they may give a free and full supply of milk when the time comes. It may also help to prevent the formation of white lines on the breast as it grows rapidly larger before the milk flow commences.

Preparation of the Nipple

The nipples must be kept soft and elastic. The application of chemicals or spirits, which was advised until a few years ago, with the intention of making them hard and strong, does more harm than good and predisposes to cracks and sore places. Cleanse them with warm water and soap. The nipples should be made to stand out and be prominent so that suckling will be easy for the baby.

Some weeks before the baby is due it will be noticed that a drop or two of fluid can be expelled from the nipple. At first this secretion is turbid, but after the child is born becomes a thick yellow. It is called colostrum. It is chiefly composed of fat, but probably has an aperient action on the baby's bowel. This secretion has a tendency to cake and form flakes upon the small openings of the nipple, of which there are about twenty. It is important to prevent this.

The nipples are prepared and cared for by maintaining an easy expulsion of a few drops of this fluid. To do this place the forefinger of the right hand, unbent, under the left nipple on the areola (that is, the coloured ring round the nipple) and the soft pad of the right thumb above the nipple, also on the areola. Gently bring the finger and thumb together so that the pad of the thumb presses towards the second joint of the finger. This pressure should be behind the root of the nipple, which will be recognised as a slightly hard and resistant area. This must be done every day and after instruction a woman can perform the exercise herself. There should be no pulling on the nipple and no force used, for

both these mistakes may result in injury to breast tissues.

If milk has to be expressed from the breast after full lactation has been established, the expelling movement is the same as that used in preparation of the nipple. The left hand is used for the right breast and the right hand for the left breast. It is necessary to expel only a few drops when preparing the nipple. Wash with warm water and soap after the exercise and wear a brassiere which supports the breasts in the manner described in the note upon clothing.

Breast Feeding

Every mother should feed her baby at the breast. During the last decade or two there has been a growing tendency to wean babies from birth. This practice cannot be too severely condemned and there is little justification for denying an infant the advantages that accrue from breast feeding, because of either social convenience or misdirected science. If a mother's breast provided nothing better than can be put into a bottle it is possible that we might advise some mothers to use a bottle, but a mother feeds her baby with her mind through her breast. It is not only the fats, proteins and carbohydrates that build the baby's body that matter, it is the deeper and more lasting influences upon both mother and child that must be considered. Over 98 per cent. of women, it has been shown, are physically capable of breast feeding their babies efficiently, providing that due care, preparation and instruction are given them. It has many advantages.

1. It is the natural way, which is almost invariably preferable to any artificial method.
2. It costs practically nothing and is always available.
3. It is labour saving, which is important to a busy mother.
4. The milk is pure, fresh and at the right temperature.

5. Statistics and experience have both shown that the breast-fed baby has a much stronger resistance to infections and to those disturbances of the digestive tract of the newborn infant from which so many die.

6. Last, but by no means least, it consolidates the mother-child relationship from the earliest hours of birth. It gives the child a tangible sense of security and enhances both physically and psychologically the reproductive faculty of the mother. This influence upon the mother is of far-reaching importance and, although there may be women who are fortunate enough to be good mothers and good wives in the broadest sense of the terms, in spite of having had to bottle-feed their babies, the large majority of those who wean their children are weakened thereby in their desire for the development of unselfish motherhood within the family circle. Only breast-feeding produces that intimate relationship between mother and child which is one of the major designs of Nature. The feeding mother is conscious of a satisfying sense of achievement when her baby is at the breast. The close contact and physical stimulus of suckling brings nearer to her mind the reality of motherhood, its joys and its responsibilities.

We must not overlook the importance of the day-dreams of a nursing mother. Not infrequently a new outlook upon life is developed, which brings a serenity of mind, enhancing for all time the patience and self-control so necessary in the up-bringing and training of children.

The physical reactions upon the mother who feeds her baby are of considerable importance to her health. In the early days, suckling her child causes strong contractions of the uterus, which result in a rapid return to its normal shape and size. It also gives rise to certain changes within the birth canal and assists in bringing back to their natural position and strength the supporting muscles of the pelvic floor.

Satisfactory lactation should be well established by the third or fourth day after the baby is born. Until that time the child should be put to the breast regularly for a few minutes every three or four hours. This stimulates lactation. The baby will not get much nourishment from colostrum, which is cleansing rather than nutritive, but complementary feeding is a mistake before the full establishment of lactation, unless ordered by the doctor for a special reason.

The baby is born with plenty of food in its body for those first two or three days, which it uses and therefore loses a certain amount of weight. A mother will supply the milk sooner and more effectively if her baby is hungry than if it shows little interest in the unsatisfying nipple. Do not be anxious for a rapid regaining of the birth weight. Only about 50 per cent. of babies are at their birth-weight by the twelfth day. Many babies start to put on good weight only after they have returned home with the mother. That is a most important time, because the success of breast-feeding during the third, fourth and fifth weeks of a baby's life is often the criterion of its ultimate progress. Do not be disturbed if a contented breast-fed baby is only putting on 4 ounces a week and do not be disturbed, either, if it is putting on 1 pound a week. It will vomit what it does not want, or it will cry for more if it has not had enough. Once at home the routine that may have been necessary in hospital can be dispensed with and the baby fed when it cries for food.

Good milk and a contented baby are the cause and effect of maternal happiness. A tense, worried or disgruntled mother gives the irritation of her mind to her baby in her milk. It becomes restless and fretful. It does not thrive and its digestion is upset. Not infrequently an acute maternal anxiety has produced loose green stools in the baby. A mother should be in a comfortable position when she feeds her infant. In a state of quiet confidence she should give of herself, her

mind concentrated upon her child and her body peacefully relaxed.

I asked a woman of the Norfolk marshes, who had brought up fifteen splendid children, how she did it, knowing well the poverty of the marshland folk. She answered, " I fed them on love milk." Many years later I realised the full truth of that unforgettable remark. There are two milks. Love milk, which prevents or overcomes all difficulties when breast-feeding, and fear milk, which makes difficulties and magnifies them.

On Getting Up

After a natural or physiological labour it is undesirable that a healthy woman should remain in her bed for more than two or three days. Unless there is any definite contraindication, which the medical attendant will judge, a woman should sit in a chair by her bedside for half an hour on the day after the baby is born. On the second day she may put her feet to the ground for the purpose of walking a few steps. Some feel their knees a little " woolly," but the majority express the opinion that they might have done it before. By the fifth or sixth day a woman should take a warm bath and move about freely. The signal of sufficiency is a feeling of tiredness. Directly she has a wish to rest she should do so. The upright position and the exercises which she does after the baby is born have many advantages.

No mother should become bedridden after childbirth. With gently increasing activity a large majority of women are physically able to return home on the ninth or tenth day after their baby is born. To insist that a young and healthy woman must remain in bed for fourteen or sixteen days after a natural birth is to invite trouble. Not only is the length of her convalescence more than doubled, but there is a grave risk that dis-

turbances may arise owing to the sluggish circulation which is encouraged by this custom. A certain amount of sensible discretion must be used on arrival home and either the husband, a friend or a nurse should endeavour to make the burden of the young mother as light as possible for another week or ten days. At the end of a month she should re-visit her doctor or the post-natal clinic to see that she has regained her normal health and strength on getting up.

PERSONAL HYGIENE

Clothing

Quite apart from the necessity for young mothers to look attractive when pregnant, they should wear suitable clothes. Maternity dresses and gowns hang from the shoulders and are made adjustable to the changing shape of the body.

After the fourth month there must be no undue pressure on the abdomen. If a woman has not been used to wearing corsets there is no necessity to do so during her first pregnancy. If she has been accustomed to heavy boned corsets it is advisable to wear them looser or procure a maternity belt.

High heeled shoes should be discarded as they are a menace at all times and distort the natural posture. After the first two or three months of pregnancy the centre of gravity alters and it is safer to wear lower heels. So many pregnant women fall down stairs or trip up for no apparent reason and, although the majority of these accidents do no harm either to the mother or the baby, it is disconcerting and causes a great deal of unnecessary anxiety.

Psychologically, clothing has a much greater influence than is generally recognised. Therefore during the proud months of pregnancy a woman should avoid

being careless of her appearance. She should not try to hide her shape or feel embarrassed when it becomes impossible to do so. For her own composure she should realise that a young pregnant woman is envied and admired by all sensible people.

Care of the Skin

The condition of the skin may be a cause of considerable discomfort to a woman. It is not unusual, particularly for brunettes, to develop large areas of brown pigment. The forehead and cheekbones are commonly affected and it may be marked on other parts of the body. This may be disturbing to a woman, but there is nothing that she can do about it. We know of no way of either preventing or curing it and her consolation must be that after pregnancy it disappears.

Sometimes itching of the skin is a great nuisance, particularly when it is down the back. It more frequently affects the abdomen, hips and upper parts of the breast, probably owing to stretching of the tissues by the enlarging uterus or by fat that tends to collect in those areas. It can usually be relieved by gently rubbing in olive oil night and morning. If the trouble continues in spite of this, dusting with calamine powder or dabbing with a calamine lotion will usually bring relief. Irritation of the genitals arises from different causes and a medical man should be consulted as to the treatment.

In the later months of pregnancy there is often a tendency to perspiration and special care must be taken to clean the skin regularly and to bath or sponge down with soap and water night and morning. The perspiration of some women has a peculiar and unpleasant odour. They may not be conscious of this themselves, but not infrequently it embarrasses others. There are proprietary lotions particularly designed to obviate this annoyance if it persists in spite of regular cleansing.

Care of the Hair

Hair sometimes loses its life and does need special care during pregnancy, not that it really affects the birth of the child, but it is one of the many small points which are overlooked and which cause distress and anxiety to a woman who is careful of her appearance. In warm or temperate climates it should be washed once a week. In northern countries once a fortnight is probably enough, as there is less tendency to dandruff and grease upon the scalp.

Just before the hair has been completely dried, massage into the scalp thin oil. A few drops is quite sufficient, but the massage is of value. The oil of macassar is, in my experience, the best for this purpose. Then, set the hair and allow it to dry slowly. This not only helps to restore its life, but it keeps the scalp clean. Women should remember the old adage about brushing the hair—" One hundred strokes night and morning."

Care of the Nails

Attention also must be paid to the finger nails, whether they are of the practical or of the social length. Their shape is not important until the baby is born, but a mother should reduce them to domestic dimensions when she is feeding and looking after her baby. A soft vaseline preparation rubbed into the cuticles every night will keep them healthy and prevent them from cracking.

Care of the Teeth

It is generally accepted that the teeth should be taken special care of during pregnancy. As soon as a woman knows she is going to have a baby she should have a thorough examination made of her mouth to see that

no decay or sepsis is present. A stiff toothbrush should not be used because a large number of women develop red and puffy gums which tend to bleed easily. This is a condition which is an accompaniment of pregnancy and does not mean that the teeth are unhealthy. It is best to use a medium brush and a saline dental powder. The brush should be firmly pressed upon the gums at the upper margin of the tooth and with a circular movement massage above the dental margin. Teeth must be cleaned regularly, particularly at night.

Excessive doses of calcium are frequently advised with the idea of maintaining healthy teeth during pregnancy. This is quite without any scientific foundation and, if the teeth do tend to decay more whilst a baby is coming, the calcium that is required for its bone and tissue formation is certainly not taken from the mother's teeth. Sound advice was given to many pregnant women by a well-known dentist. " Your toothbrush will do more for your teeth than the tablets you are taking. Drink your milk and put the calcium down the drain."

If gums become swollen and soft during pregnancy, in the normal course of events they will recover their firmness within a few weeks after the baby's birth.

Diet

Every ancillary science that touches upon childbirth is important, but, like diet itself, these ingredients must be balanced and the tendency to over-enthusiasm curbed. Dietitians, radiologists, physiotherapists, psychiatrists and others all tend to over-do the significance of their specialty. Obstetrics requires a wide knowledge of many subjects and familiarity with the unobtrusive edicts of commonsense.

A healthy pregnant woman requires no diet-sheet on the table or food scales on the sideboard. It is unwise to lay down hard and fast rules in this matter, but some general principles should be observed. The Victorian

idea, that a pregnant woman eats for two people, must be dispelled. Excessive eating during pregnancy is even more harmful than at other times.

There is little reason why a woman should alter the normal diet upon which she has maintained good health. Her body is accustomed to it and any sudden change may do more harm than good. If, however, she shows any signs of malnutrition, her physician or the clinic will help or advise her how to overcome the deficiencies. But, if she is excessively fat, she should eat less than before and seek advice from her doctor how to balance her diet, which will ensure her putting on the minimum extra weight during pregnancy. Vegetarians need not add to or change their food. Speaking generally, they have less trouble with pregnancy and labour than those who eat much meat. If a woman has been accustomed to meat and vegetables and cheese she should continue to eat them, but gradually balance the relative quantities of each.

Milk is without exception the most important food for a pregnant woman. She should take two pints a day, if it is available. As well as its nutritious elements, milk contains calcium in a form which makes it easily assimilated. This constituent is important in pregnancy for both mother and baby.

Eggs, cheese and butter are also valuable foods and supply essential vitamins as well as nutrition.

Meat used to be limited during pregnancy, but to-day there is a tendency to believe that a certain amount of meat is not only harmless, but beneficial. My experience is that women do better in pregnancy and labour if they eat little or no butcher's meat and, after advising this for thirty years, I have no reason to alter my opinion, providing always that they can get an adequate supply of protein from other sources.

Liver is an excellent food and should be eaten at least once a week.

Sea-fish, which is usually obtainable, should be eaten

two or three times a week. It contains iodine, which is valuable in pregnancy.

Poultry and rabbit are also good and supply proteins.

Soups and broths have very little food value, but are a pleasant way of taking fluid.

Wholemeal bread and toast suit most pregnant women better than fresh white bread, pastries and cakes.

Fruit and Vegetables. Special mention must be made of the place of fresh fruit and vegetables. Vitamins are substances which are necessary to the health of all human beings and are found in large quantities in fresh fruit and certain vegetables. It is the natural and most pleasant way of taking them and, when combined with the foods mentioned above, the bodily needs are fully supplied. They should therefore be eaten liberally if it is possible to obtain them. If it is not easy, for any reason, to have a good supply of fresh fruit and vegetables, the vitamin quota can be taken in concentrated form in fish oils. (One or two capsules of halibut oil or two teaspoonsful of cod liver oil a day.) This is particularly important from the twentieth week of pregnancy onwards.

Preparation of Food. Hot fats, foods cooked in fats or fried, are best avoided, particularly late in pregnancy, as they are frequently indigestible.

Sweets. Sweets and chocolates must be eaten with moderation, as during pregnancy they appear to have a tendency to disturb digestion and are fattening.

Fluids. There is no indication to take an excessive amount of fluid.

Alcohol is best avoided, but if a woman desires or has been accustomed to a glass of sherry, or half a pint of stout occasionally, it will do no harm. Spirits and liqueurs should not be taken.

Smoking. Notice must be taken of smoking. If a woman smokes twenty-five or thirty cigarettes a day during pregnancy and lactation she is likely to do harm both to herself and her child. There is no reason to

think that three or four cigarettes a day, *i.e.*, one after each meal, are likely to be harmful either to the mother or her baby, but by giving up entirely she will exhibit self-control which is probably the most important asset that a woman can have during pregnancy, labour and motherhood.

Heartburn

There is one troublesome and all too frequent complaint, particularly with women who are having their first babies. They get an acid burning feeling rising up in their gullet, sometimes known as heartburn. This is not always due to an excess of acid but is sometimes mechanical owing to the alteration and disposition of the stomach and the organs about it. Eating hot fats and an excess of sugar is likely to produce this and, although not invariably the cause, this should be remembered when efforts are made to treat it. Neither taking of alkaline powders nor acid medicines is always successful. Frequent small amounts of fruit juice or a charcoal biscuit about once an hour may combat this unpleasant symptom. It is usually an indication for a little more exercise and a freer action of the bowels.

Care of the Bowels

There should be a regular bowel action each morning. If a glass of hot water, with or without a teaspoonful of honey stirred into it, is taken first thing in the morning and stewed prunes, figs, raw apple or raisins with breakfast, the necessity for aperients may be avoided.

For many years liquorice powder tablets have been recommended. They give an easy action without any discomfort. One should be taken at night as it is usually sufficient. If that is not enough, however, a second

tablet should be taken after the midday meal. This laxative has no influence on the uterus and does not gripe.

The liquid paraffin preparations and emulsions tend to create wind and have other disadvantages. The salts, such as Epsom, the other sulphates and the effervescent preparations, give liquid motions and are best avoided. Cascara sometimes causes pain. Aloes and calomel may irritate the uterus, as castor oil does in some women.

If any difficulties are experienced advice should be sought from the doctor or antenatal clinic, because local conditions may alter circumstances and there is no general rule in these matters. However, if the dietetic principles described have been observed it is unlikely that aperients will be required.

The Support of the Pregnant Uterus

When a young and healthy woman is having her first baby the gradual change in the size and shape of the abdomen requires no extra support. The muscles of the abdomen will be kept in good condition by exercises and, until she is six or even seven months pregnant, she will have no discomfort from the protrusion of the abdominal wall. Should she, however, have a loose abdominal wall it is best to support the weight of the uterus, not only for her personal comfort, but also for the lie and presentation of the baby before labour commences.

The changes in the shape of the abdomen from sixteen weeks, when little change is noticed, to thirty weeks, are shown by the dotted outline on Fig. 10, and finally the change to forty weeks or full term, with the slight carrying forward of the whole body, is demonstrated. It will be noticed that there is a marked difference between thirty and forty weeks and the abdomen should be supported to prevent an unnecessary falling forward of the uterus, bearing in mind that the child is lying in the position shown in the frontispiece.

It will be seen that any form of belt which tightens or presses down from above is likely to cause discomfort to the woman by compression of the uterus. The object of support is to hold the upper part of the uterus up

FIG. 2. The Maternity Belt —lateral view.

FIG. 3. The Maternity Belt —frontal view.

in the abdomen so that the child has free movement and the mother has no feeling of constriction.

A belt, such as is shown in Figs. 2 and 3, has the effect of lifting the uterus up and maintaining it in a good position without any pressure upon its upper part and with no added pressure upon the uterus itself. The other organs within her abdomen fall into their allotted

place and carry out their duties without any restriction. Such a belt can be worn and adjusted from the sixth month of pregnancy to full term. It also enables a woman to maintain a good posture and freedom of breathing, which enhances her sense of well-being during the later months of pregnancy.

Breasts

It is the right of every woman to have good health, but like other valuable possessions, it must be worked

Fig. 4. Natural position of the Breast in relation to its Anatomical Structure.

for and maintained by constant care and supervision. Many important factors have been overlooked in modern life, which result in a large number of women being only

partially well. Too little attention has been given to the care of the breasts.

A woman's figure has an important influence upon her sense of well-being, just as her posture has upon her physical health. Many women have been made un-

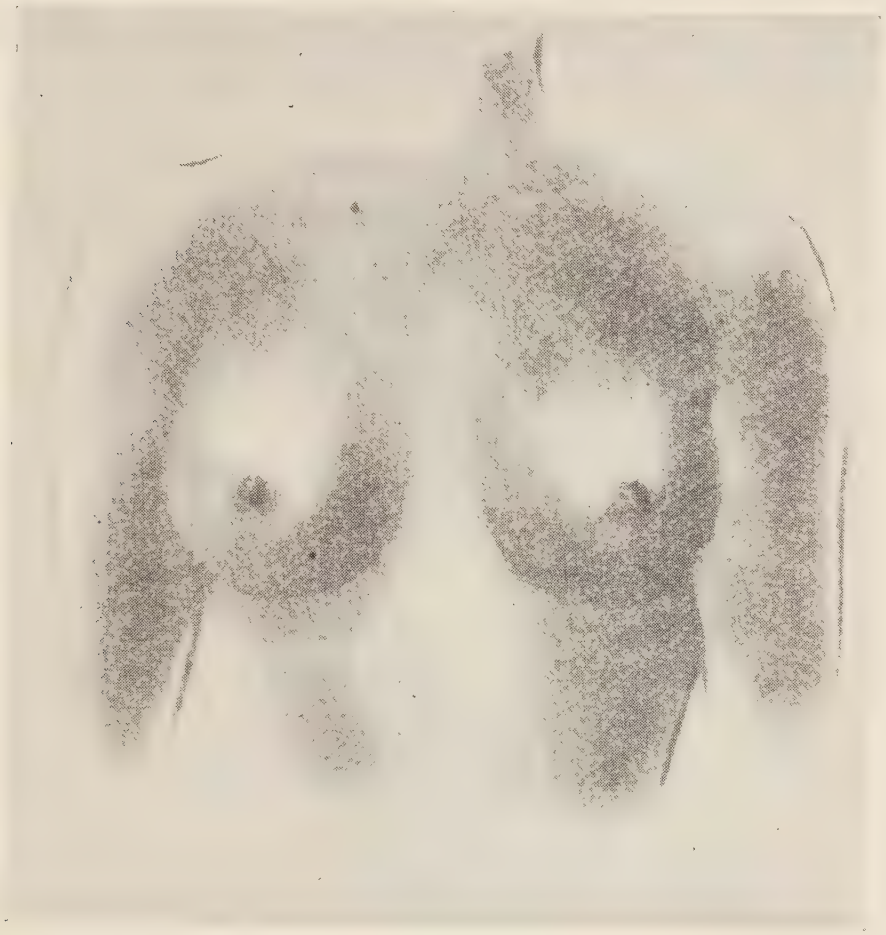

Fig. 5. Normal healthy Breasts in Pregnancy (European).

happy because of deformed breasts which, had they been properly cared for, might have retained their natural shape and comfort. Mothers have been unable to feed their babies because they have unwittingly maltreated their breasts in order to conform to a social or sartorial fashion.

Diseases of the breast are all too common in modern woman and it is probable that causes can be found for such conditions in the chronic irritations of pressure and distortion to which breasts have been subjected by ill-fitting garments.

It will be easier to avoid causing trouble if the structure and requirements of the breast are explained in an elementary way. In the non-pregnant state the breast largely consists of fat supported by fibrous strands lying in various directions. In this fat there are series of small glands lying on the base of the breast rather like bunches of grapes and the tubes from these glands run forward towards the nipple and open into a space

Fig. 6. Normal healthy Breasts in Pregnancy, showing correct position of Nipples.

roughly corresponding in size to the coloured area that surrounds the nipple.

During the latter part of pregnancy these small glands increase in size and become active and secrete substances which are the forerunners of milk. The whole breast then increases in size and two or three days after the baby is born the secretions give place to a full flow of milk, which is poured out by the glands into the space behind the nipple, from which it is sucked by the infant or forced out by contractions of the muscles of the nipple.

We must not overlook the fact that the human body

was constructed to be on all fours and not in the upright position. We have adopted the upright position over the ages of man, for purposes of survival as a species. Most of our physical structures have adapted themselves to this position, but the abdominal organs have lagged far behind the limbs. For example the veins in the abdomen have no valves as they have in the limbs. This is one of the reasons why many people suffer from

FIG. 7. A frequent result of inefficient support of the Breasts from their development at Puberty.

varicose or swollen veins in different places below the waistline. Another trouble caused is the dropping of the organs within the abdomen because their natural supports were meant to hold them in position with the body horizontal and not vertical. Dropped kidneys, dropped stomach and turning back of the uterus in the pelvis are conditions we do not find in the four-footed animals.

The breast also suffers from the adoption of the up-

right stance. There are many varieties of breast and different Races show different characteristics in breast formation. For the purpose of this description we will speak of the European breast which normally in the healthy virgin state is the shape of a half lemon. So long as this shape is maintained all the glands and ducts are supported by the natural fat of the organ in such a manner that they can secrete the fluids of pregnancy and

Fig. 8. Side view of an inadequately supported Breast that has been allowed, from Puberty to Pregnancy, to lose its natural and healthy contour.

lactation freely. The natural shape is seen in Fig. 4, showing a woman in the all-fours position. In Figs. 5 and 6 a healthy young pregnant woman with her breasts in the correct position demonstrates that with their increasing weight they are likely to fall down on to the lower ribs, thereby stretching the skin between the nipple and the top of the breast bone. The result of this is seen in Fig. 7. Such breasts as are shown in this figure not only cause constriction of the glands in the upper part, but also, by falling over the lower part,

cause deformity of the glands on the under side and restrict the free circulation of blood within the organ.

Figs. 8 and 9 show the position in which such breasts should be supported, even though they have lost their pristine shape. The tendency of modern garments is to press pendulous breasts even further out under the armpits, to flatten them and to make them as little obvious as possible. The result of such treatment is to increase

Fig. 9. Unnatural development of the Breast and the position, in dotted lines, in which it should be supported to allow unimpaired development of the Milk Secreting Glands during Pregnancy and Lactation.

the deformity, to add further constricting pressures and, in many cases, to limit the activity of the breast during lactation.

Happily in some countries the edicts of fashion demand that the figure shall be full and rounded. Therefore, when seeking to support the breast in a healthy natural position, choose that garment which is designed to receive the organ within a well-fitting rounded cup, supported by straps which lift it to its

correct height upon the chest and draw the breasts inwards so that the nipple is centrally placed upon the base of the gland which is attached to the chest wall. Such garments not only enhance the appearance of a woman and the efficiency of her lactation, but they relieve her of the drag upon the shoulders and upper backache so often caused by heavy pendulous breasts. With such support a woman can maintain a good upright posture. She is able to breathe freely, using the upper part of her chest, to move with comfort and self-assurance and to avoid bad posture and inadequate breathing. This is emphasised many times in these chapters. POSTURE and BREATHING are indisputably the fundamental acquisitions of a healthy woman.

Posture

The correct posture should enable a woman to move gracefully and to breathe freely. Speaking generally a straight line from the ear to a point just in front of the heel on the sole of the foot should pass over the centre of the shoulder and the hip joint. This enables the muscles of the limbs to work to the best advantage in all directions. It retains the abdominal organs in good position. Breathing is free, deep and effortless and the carriage of the head at this angle avoids round shoulders and poking of the chin. It also gives a feeling of well-being and cheerfulness, which is important.

Before a looking glass this imaginary line enables a woman to adopt the correct position. Her head should be carried as though looking slightly above her height. There is nothing more attractive than a young pregnant woman moving freely and maintaining her personal appearance in good posture.

The alteration in the shape and weight of the body during pregnancy will unconsciously lead to stooping unless attention is paid to it. Time and trouble are not

Fig. 10. The shape and carriage of the Body.

wasted by strict and constant care of the carriage and posture of the body. See Fig. 10.

Antenatal Exercises

These exercises are for the purpose of:

1. General physical fitness.
2. The control and efficiency of breathing.
3. To make the muscles elastic and freely moving.
4. To mobilise the joints of the pelvis and lower back.
5. To obtain and maintain a good posture and carriage.

There is no reason why a woman should not have an even better figure after she has borne a child than before. It is unnecessary to become fat or ungainly because she is a mother.

Exercise 1

Stand with the heels about 12 inches apart and toes turned slightly outwards, the hands hanging at the sides with the palms turned to the front (Fig. 1). The first movement. Raise the hands in front of the body with the arms full length. Lift the chin and throw the weight forward on to the ball of the foot with heels off the ground (Fig. 1A). Continue

1 1A 1B

FIG. 11. Exercise 1.

movement. Swing the arms outwards level with the shoulders, throw the head back and raise on the toes (Fig. 1B). During this movement, which should be done slowly, breathe in deeply. Pause for a moment in position 1B and slowly resume the positions in Fig. 1A to Fig. 1, breathing out as the arms drop to the sides.

This exercise should be done ten times.

Exercise 2

Assume the position of Fig. 2. Rest fingers on a chair or the bed if it is difficult to maintain balance. Settle firmly down on to the heels and separate the knees as widely as possible. Bring the knees together and rise to the standing position and

Fig. 12. Exercise 2.

sink down again on to the heels. Return to position 2 and bounce on the heels once or twice, separating the knees again as widely as possible. Do this six times.

This exercise is particularly useful for the joints of the hips, muscles of the thighs and the points of contact of the bones of the pelvis.

Exercise 3

Assume position 3, with the hands about 12 inches apart and the knees about 9 inches apart. Tuck the head down between the arms, raise the back and pull the buttocks in, inwards and downwards.

Second movement. Allow the back to hollow, lift the head in position 3A. At the same time raise the buttocks as high as

Fig. 13. Exercise 3.

possible and slightly bend the elbows. This should be done whilst breathing in. Continue by slowly assuming position 3 again, breathing out, and so on.

This exercise is particularly useful to prevent backache. It also mobilises the spine in the lower parts where it joins on to the pelvis.

These movements should be slowly and deliberately performed ten times.

Exercise 4

Assume the position in Fig. 4 with the knees about 12 inches apart. Sit on the heels and not on the floor between them. This is particularly important in the later months of pregnancy.

Hollow the back and throw the head back, pressing the

4 4A 4B

Fig. 14. Exercise 4.

hands upon the thighs as in Fig. 4A. Breathe in during this movement.

Bring the body and head forward, resting the elbows on the ground immediately in front of the knees (Fig. 4B). Breathe out during this movement.

Assume position 4 slowly. Rest for two or three breaths and continue as before.

This exercise should be done slowly and deliberately ten times.

Exercise 5

Lie on the back with the head supported on a low pillow, the hands resting lightly on the abdomen just below the ribs, as in Fig. 5. Take a deep breath, filling the chest until it is well rounded under the collar bones, adding gentle pressure with the hands on the abdomen. Take three full breaths in this position and rest for a moment. Then place the hands

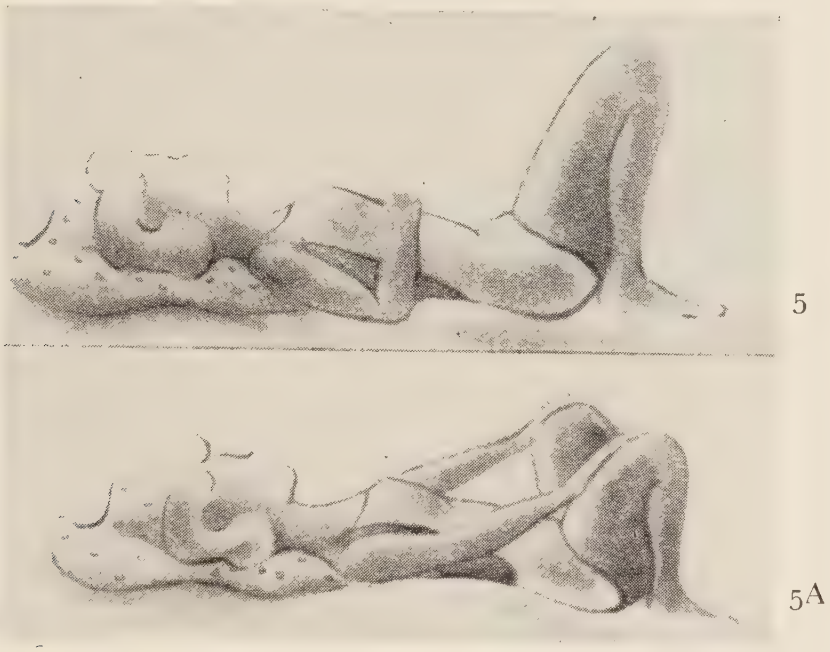

Fig. 15. Exercise 5.

on the inner sides of the knees, forcing them out as far as they will go, as shown in Fig. 5A. Again assume position 5 and repeat the exercise five times.

This is particularly useful as an aid to obtaining respiratory control when lying on the back and at the same time allowing the knees to fall out and so stretch the big muscles down the inside of the thighs.

Exercise 6

Lie flat on the back with the toes pointed and the head resting on a low pillow, the hands to the sides about 3 inches from the thighs, the arms full length (Position 6). Take one or two deep breaths, raise the right leg, pointing the toe (Position 6A). Slowly replace it on the ground. Do this six times with the right and six times with the left legs. Rest for a few moments and become relaxed, breathing slowly, regularly and deeply whilst so doing. Raise both feet together to a right angle with the body (Position 6B). Allow them to drop slowly so that the heels touch the floor gently upon resuming position 6.

This exercise is excellent, not only for the hip joints and the muscles around the pelvis, but also for the abdominal muscles and the muscles of the legs.

Many find 6B difficult to perform and if at first it cannot be done then raise the feet together off the ground for a few inches and put them down slowly. After a week or two it will be possible to attain position 6B.

There are many variations of this exercise, such as opening the legs and laterally swinging one across the other, or bringing the feet upwards over the head, but for the purpose of pregnancy all that has been described is sufficient.

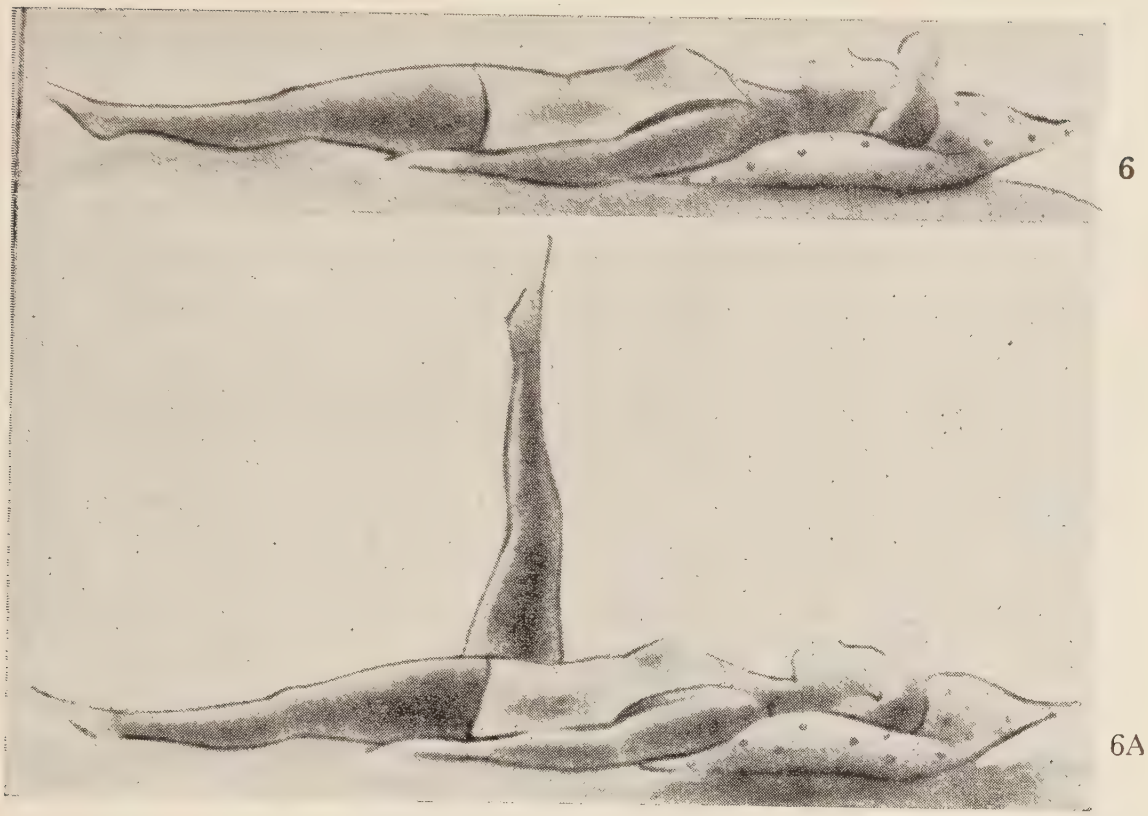

FIG. 16. Exercise 6.

FIG. 17. Exercise 6 (Position 6B).

These simple exercises can be done quietly and without any hurry in a quarter of an hour. There should be no fast movements and no movements which twist or rotate the trunk and it should be remembered that advanced physical exercises have a definite purpose in maintaining the best physical condition, but these six simple movements can be used by women who are not accustomed to physical exercises. The object for which they are prescribed can be attained without tiredness or strain. Should a woman who is accustomed to more advanced exercises desire to continue to do them there is no contra-indication, until the size of her uterus may limit certain activities. Do not aspire to gymnastics, but to controlled movements performed whilst the mind is concentrating upon what is being done.

The importance of correct breathing cannot be over-estimated. It is the foundation of good health. Controlled and deep breathing is one of the essential acquisitions for easy and healthy labour. It is necessary in order to acquire and maintain good posture. It should be remembered that the health of all organs, as well as of the young baby itself, depends upon a free and plentiful intake of oxygen. This is obtained by full use of the lungs which take oxygen from the air we breathe into the blood, by which it is distributed throughout the whole body.

Labour Position

During the last two months of pregnancy it is as well to adopt, whilst doing the exercises, the position which will be found most comfortable while giving birth to a child.

Fig. 18 shows the subject resting with her back upon high pillows at an angle of 40 to 45 degrees to the

Fig. 18. Labour position.

bed. The knees are drawn up to the sides of the abdomen by the hands, which grasp them. Fig. 18 shows the first movement. Having adopted this position, pull the knees widely apart. It will be seen, if the book is turned so that the feet and buttocks appear to be resting on the floor, that this is the position of squatting, with the head brought forward and the back rounded.

It is wise to practise this position, particularly the wide opening of the knees, so that when labour has advanced to the second stage everything may be done to allow the baby to arrive as easily as possible.

Relaxation

After exercises, which should be carried out either before meals or not less than one hour after, relaxation of the body must be practised. It is the greatest possible assistance to a woman during labour for, if she is able to become completely relaxed DURING the contractions of the first stage and BETWEEN the contractions of the second stage, she will find that normal labour has no unbearable discomfort from beginning to end, assuming of course that she has done prenatal exercises and been instructed as previously described.

Relaxation is also of great benefit during pregnancy. Half an hour's relaxation is worth more than twice that time in sleep. It releases states of tension that a woman will unconsciously adopt and so avoids all manner of aches and pains. It introduces a calm outlook and helps to establish confidence which, in a state of tension, is practically impossible. Tension is caused by anxiety. Relaxation helps to overcome anxiety by relieving tension of the mind as well as of the body. Practise assiduously, therefore, this simple procedure.

Preparation

Visit the lavatory so that the pelvic muscles can be relaxed with safety. Before adopting the position of relaxation stand and tense all the muscles of the body, stretching the arms well back, as if in a deep yawn.

Position

There are three positions of relaxation.

Position 1

Lie on a wide couch, the floor, or a hard bed, with a pillow under the head and the upper part of the shoulders, as in Fig. 19. If it is more comfortable, place

a small pillow or cushion under the knees. The arms are at the sides, elbows slightly bent, hands half closed and resting about 6 inches from the body. The feet should be about 6 or 8 inches apart. The head is allowed to fall gently on one side on the pillow with the chin slightly raised.

Take three or four slow deep breaths and, on expiration, let every muscle in the body become flaccid and still. Feel the arms hanging from the shoulders and the hands lying heavily on the bed. Fingers and thumbs must not move. There will be a sensation of sinking into, or even through, the bed. The feet fall outwards upon the heels. The knees are carried outwards by the

FIG. 19. Relaxation—Position 1.

weight of the feet. There must be no movement of the toes.

The head is supported upon the pillow so that the muscles of the neck are completely loose. The eyelids will half close of their own weight. Particular care must be taken not to blink the eyes or move the eyeballs within their sockets. The muscles of the face will be felt to hang loosely from the cheek bones, giving an expressionless appearance. The jaw, with the mouth slightly open, will hang on the face. When the face is relaxed the appearance must not be considered for it is not at its social best. This must be remembered, for many women find it difficult to become expressionless !

Having adopted the position of relaxation, two or three deep breaths are taken and, from full inspiration, the breath is allowed to leave the lungs through the mouth without controlling or impeding it. It is not

forced out. Remain quietly in the flaccid state. Breathing will slowly change from a shallow slow rhythm and become deeper and slightly more rapid and finally will stabilise in a normal, gentle, quiet rhythm.

Certain muscles may become irritable or certain movements irresistible. Should this occur take two or three deep breaths and resume the flaccid state.

During relaxation less oxygen is needed than when in a state of tension or movement, therefore breathing may become almost imperceptible as, with practise, the ability to relax improves. As time goes on the weight and heaviness of the limbs will be realised. Only with considerable difficulty can one leg be raised slowly from the bed. It will assist in recognising the relaxed state if the contraction of muscles in the leg is felt before the heel is raised from the bed. The thigh muscles and those down the front of the leg will give a distinct sensation of tension if the movements are made sufficiently slowly. The same may be tried with the arm. From the shoulder start to lift the arm from the bed—not the hand, but the whole arm. The strain upon the muscles will be felt long before there is sufficient force to raise the limb. These tests must be carried out thoughtfully and very slowly. Violent and sudden flinging of the arm or the leg into the air will undoubtedly be easy, but it will teach nothing of the sensations of relaxation and early tension. Having raised the limb 1 or 2 inches from the bed, let it fall. In this way a muscle sense will be developed, which makes deep relaxation much easier.

As progress is made in the art, the heaviness of the limbs and body will be replaced by a sense of lightness. It has been described as floating. Those very adept in the practise may become conscious of a sense of alienation from their bodies. It is not, however, necessary for the full benefits of relaxation during pregnancy and labour to attain such a very high degree.

When commencing to learn relaxation it is well to concentrate upon each part of the body separately.

Start with the toes and work upwards—ankles, calves, knee joints, thighs, hips and buttocks. Be sure that these muscles and, therefore, the joints with which they are associated, are free from tension. The muscles of the spine may present difficulty as some women have very hollow backs which will not rest comfortably upon a flat surface. It will be better if they assume the position shown in Fig. 21.

Position 2

The second position for relaxation is shown sitting in an arm-chair. Some women, during the early and

Fig. 20. Relaxation—Position 2.

middle months of pregnancy, tend to become giddy or uncomfortable if lying on their backs and prefer to recline in the position shown in Fig. 20. The feet and knees are apart. The forearms rest along the arms of a chair. A cushion fits comfortably into the back and the head falls on one side so that no part of the body requires muscular effort to retain the position that is adopted. This will frequently prove an effective means of learning how to relax and when progress has been made in this position it is usually easy to adopt the position shown in Fig. 21 for the later months of pregnancy.

Position 3

The third position is important and should be learned as an alternative to the other positions early in pregnancy, even though it may not at that time be necessary. In the later months of pregnancy, when the uterus is large and possibly bulky, it is usually uncomfortable to

Fig. 21. Relaxation—Positions 3 and 3A.

lie flat on the back because breathing may be difficult owing to the pressure of the uterus within the abdomen. It is advised therefore to practise the position shown in Fig. 21.

Lie on the bed on the right side, with the right arm behind the back, the left arm hanging loosely over the side of the bed. The left shoulder should be dropped as there is a tendency to draw it up. The head should be resting on a pillow and the chin slightly raised. The right leg is stretched out down the bed, whereas the left is drawn up until the knee is on a level with the upper abdomen. A firm pillow is placed under the left knee

and in that position the whole body is relaxed. Two or three deep breaths are taken and a sense of comfort and support is immediately appreciated. The uterus will be supported upon the bed without pressure and free movement of the diaphragm is obtained when breathing. Position 3A shows a back view of a women relaxing on her left side, for it is equally effective on either side.

Relaxation should continue for half an hour. In these days when women live energetic lives it is customary for them to fall asleep within two or three minutes of having become relaxed. During the early months of pregnancy this sleep is in every way beneficial. When a woman is thirty to thirty-two weeks pregnant the tendency to sleep grows less and many will relax for a full half hour and not fall asleep.

Care should be taken to arouse slowly from relaxation for if the upright position is suddenly adopted, giddiness, faint feelings or even fainting, may result. Therefore there is a routine for finishing a phase of relaxation. Take two or three deep breaths, bend the knees and arms once or twice, and sit in an upright position, slowly putting the legs down over the edge of the bed. Remain in that position and take two or three more deep breaths and stand upon the feet. Then stretch the limbs and free movement can safely be resumed.

It is advised that all pregnant women should, before going to sleep at night, endeavour to become completely relaxed. It will overcome restlessness, dreaming and that half-wakefulness which so frequently results in a desire to urinate and so disturb the night's rest.

It is well to recall, since the routine of exercises and relaxation may be difficult, that the object of carrying out these measures preparatory to labour is in order that the baby may be born in the easiest possible way and that the mother may suffer neither injury, disability nor deformity from bearing a child. Not only, therefore, for herself, but also for the well-being of her child should

she attempt to learn relaxation and do the exercises that have been described.

Positions During Labour and Delivery

1. The first stage of labour, once fully established, is best conducted with the woman lying quietly in bed. Some prefer to lie on their back and others prefer their side, as described in the positions for relaxation. If she wishes to get up and walk about for a short time there is no reason why she should not do so, unless it causes any discomfort.

2. When the second stage of labour commences and the mother starts to push her baby through the birth canal, a position should be adopted that gives the greatest freedom of muscular action and the maximum size of the pelvic outlet.

In order to do this a woman should be delivered on her back, lying propped up on pillows or a bed rest. The knees are drawn up beside the chest and the woman holds them with her hands and pulls them outwards and upwards, whilst her feet are supported either on rests or by attendants. This position is shown in the illustration of the exercise for labour position. (See Fig. 18, p. 75.)

There are other positions adopted by the women of races whose lives habituate them to different customs. For instance, some of the Far Eastern peoples squat on their feet when their babies are delivered and certain nomadic races kneel and have their babies very easily in that position. In some countries the horseshoe-shaped labour chair was in use until the beginning of the nineteenth century, and may well appear again in modernised form. A good deal can be said in its favour.

The position which is still taught in many schools of obstetrics is known as the " left lateral." The woman lies on her left side with the knees drawn up and is very often supplied with a towel or pulley attached to the foot of the bed and a board across the bottom of the

bed on which she can firmly place her feet. This reduces the mechanical advantage to her effort and it does not enable the pelvic bones to be stretched to their widest limit. It makes controlled and deep respiration very difficult, if indeed possible, and the woman in labour cannot see her attendant unless she turns her head and looks over her right shoulder. If she is conscious at the birth of the child she cannot see what goes on unless a second assistant is present to hold up her right leg.

The left lateral position has only one possible advantage and that is to a lone midwife attending a woman who cannot be persuaded to hold her own knees. The advantages of the dorsal position will never be doubted by any obstetrician or midwife who has become familiar with the technique of delivering in the squatting attitude.

Note: We are indebted to Dr. Kathleen Vaughan, of London, who has studied this subject in many countries and amongst many races, for pointing out the mechanical advantages of the squatting, crouching and kneeling positions during childbirth.

Games and Recreations During Pregnancy

There is no reason why games and recreations should not be enjoyed during pregnancy, so long as a few commonsense rules are observed. There should be no violence.

A practised and skilful performer of a sport attains a high degree of efficiency without effort or undue strain. For instance, a good tennis player, because of her knowledge of movement, footwork and timing, can play without any risk, whereas a poor performer, who stumbles, twists and over-reaches, may do harm.

A good golfer, with an easy smooth swing may find it a healthy and pleasant pastime, whereas a long handicap

player who twists her body, strikes ferociously at the ball and hits the ground, may do damage.

A good horsewoman may continue to ride, but an uncertain seat invites trouble.

This general principle should be applied to swimming, dancing, cycling and indeed all forms of recreation. Easy movements without strain or exhaustion are no risk to pregnancy.

In first pregnancies women should live quietly until the twelfth to fourteenth weeks, and at about the twenty-eighth to thirty-second weeks the majority find it advisable and comfortable to give up active sports. If the prescribed exercises are done regularly and a walk of two or three miles a day is taken, physical fitness can be maintained.

Over-stretching is always unwise, especially working with the hands above the head. Lifting weights should be avoided. Such incidents are more likely to occur whilst doing housework than at games. Hanging pictures or curtains, moving furniture and carrying a full suitcase or heavy shopping basket, cause more trouble than games discreetly played.

Postnatal Exercises and Care

The objects of postnatal exercises are:

1. To promote efficient circulation of the blood.
2. To maintain the habit of deep and controlled breathing learned during the antenatal training.
3. To regain good posture and carriage.
4. To aid the absorption and natural distribution of fat stored in and on the body during pregnancy.

The minimum that a woman should do is given. It is recognised that the average mother does not have much time for exercises and relaxation when she has one or two young babies to look after. She will be less tired, however, and more efficient if she organises her daily routine so that one hour can be set aside for this purpose

—a quarter of an hour exercising and half to three-quarters relaxation.

On the second day deep breathing should be carried out. It is enough to do six deep breaths three times during the day.

On the third day, in the position of antenatal exercise 5, after having taken a few deep breaths, bring the knee up on to the chest, straighten the leg and drop it slowly to the bed. This should be done alternately left and right legs. In the same position, stretch the arms out on a level with the shoulders, bring them upwards to meet at full length above the chest and swing them slowly, fully extended, outward to the level of the shoulders. This should be done twelve times, breathing in as the arms fall outwards and breathing out as the hands are brought together.

On the fourth day antenatal exercise 6 should be done.

On the fifth day antenatal exercise 1, assuming that the woman got up on the third or fourth day.

On the fifth day, also, antenatal exercise 3 should be done and varied by bending the elbows down on to the bed, so that the chest is resting on the bed and the woman assuming what is known as the knee-elbow position. She presses up till the arms are fully extended, raises and lowers her back and allows, with the lowering of the back, the elbows to bend slowly until her chest is on the bed. This should be done six times.

On her return home she should continue with her exercises and, if she has time and desires to do more, she may follow those prescribed by one of the many good physical culture exponents. After exercising there should be a period of relaxation, either lying on the abdomen with both legs extended, or on the side as shown in Fig. 21. These positions take the weight of the still bulky uterus off the pelvic floor and tend to prevent it from falling backward on the pelvis as it returns to its normal size.

The Pelvic Floor

It is extremely important that the muscles and tissues of the pelvis, which have been stretched and considerably loosened during childbirth, should be restored to their normal tone and strength. Many of the discomforts that follow childbirth are due to the absence of this care.

Women all too frequently complain of the leaking of a few drops of urine if they laugh or cough suddenly. Others have a feeling of looseness, as if their inside was falling out. The tightening of the muscles at the outlet of the three orifices and the muscles of the pelvic floor overcomes, in the majority of cases, these and other discomforts. This should be started on the second day after the arrival of the baby and it is done in the following way.

A tight squeezing contraction of the pelvic muscles is made, similar to the effort required when there is a desire to pass water at an inconvenient moment. That " squeezing up " need not in any way be associated with movements of the thighs or buttocks. The exercise, if it may so be termed, consists of firm contraction, followed by complete relaxation of the muscles of the pelvic outlets. There should be a pause when the tension is greatest, before the muscles are allowed to loosen. This has the effect of drawing up the back passage, tightening the ring round and within the vaginal orifice and closing firmly the small tube through which urine is passed. It should be done twelve times, two or three times a day, until there is a feeling of control and firmness of the pelvic outlet. It has many advantages. It prevents what is termed stress incontinence of urine. Hæmorrhoids which have developed during labour will subside rapidly. It soon overcomes the sensation of " dropping " from the birth canal. It also restitutes the tension of the vaginal muscles, which is of considerable importance to a young married woman.

These movements can be done while standing or sitting and at such times as a woman may turn her mind to it. They should be continued for six to eight weeks after the birth of the child, by which time women are conscious of more complete control of that part of the body than they have previously been aware of.

Husband-Wife Relationship during Pregnancy and Childbirth

The birth of a child may bind or break a marriage. The love of a woman for her child and the love of a woman for her husband have different foundations and manifestations. When a baby is born the first questions of a young mother concern the welfare of her baby. The first questions of a young father concern the welfare of his wife. This persists until the child is able to care and fend for itself.

Experience has shown in the past, on many occasions, that in time of danger a woman will save her child before her husband, whereas a man similarly placed normally saves his wife first. It does not mean that the wife has no love for the man, or that the man has less love for his child, but demonstrates the instinctive valuation of love as between the three of them. This is well recognised in the traditions of the sea where the shipwreck order is " Women and children first."

Consequently a woman should bear in mind that a little more tenderness to her man after the child has arrived will maintain and strengthen the bond of affection between them. But this will not have the same effect if during pregnancy the birth of their child has been only the interest of the mother and not of the father. Therefore a woman must interest her husband in pregnancy and must point out that it is his child as well as hers. As she learns of its development and growth she should choose the time and place to tell him all she knows. Many men are shy about these matters,

but nonetheless eager to be informed. They may pretend it is not their affair, or even worse, profess to know all about it in order to submerge their ignorance.

Most men want families and will love their babies in a man's way from the earliest age if they are encouraged or even allowed to learn. Paternal love is different from maternal love, but it is an equally deep emotion. Husbands are just as difficult as wives. Women must not pride themselves that they are the only incomprehensible component of the human race. Man may consciously or unconsciously be confronted by dangerous reactions to his wife's pregnancy. He may fear for her safety in childbirth or her health and beauty afterwards. He may resent the child arriving, through jealousy of the love his wife will give it. He may desire her for himself alone and foresee a rift in the early companionship that they have enjoyed together. He may be disturbed by the immediate cost and future expense. He may accuse himself in his anxiety that she must face the ordeal of childbirth. In a more intimate sense, there are still men who seek other companionship during the limitation of their wives' activities, or even try to justify their behaviour in the biological concept of the " polygamous instinct of the male."

These things therefore call for special attention on the part of the wife. She must take care of her husband for above all things she desires to keep him for herself. She knows that she and her child depend upon him. She is proud that she is giving the man she loves a child. Whatever heights of happiness two people may reach when they become parents, great care must be taken of the foundation upon which their home life is built. Women, therefore, must share fully with their husbands the child that is born to them. The love of husband and wife, that gives them children, needs more care than the children that it gives. It is a delicate and beautiful thing, fragile and sensitive. It must be nurtured, watched and protected and demands unselfish

sacrifice for its survival. It fades quickly if left without attention and must be studied carefully as it strives to mature with the years. The husband must become interested in the affairs of the wife, which primarily concern the children and the domestic hearth. The wife must become interested, though not necessarily actively so, in the affairs which concern her husband, which are primarily the maintenance of the family and home.

The variations of affection may be mistaken if not understood, but should an intruder lay a hand upon it then each should fight with every weapon at their disposal rather than allow it passively to be lost. If a woman does not feel her husband's pleasure in their child her urge to have more children is tainted and suppressed. There is no advantage to be gained by making childbirth an incomparable delight and motherhood the greatest thing in life if in so doing the husband is estranged and seeds of discord are sown in the home. Much trouble and sadness occurs from the isolation of the husband and the harm may be done before the wife has even thought it possible. The happiness of childhood is not only for the mother and her child, it must include the husband and so make home and family life the ultimate objective of modern obstetric teaching.

An obstetrician should not allow the isolation of a husband to be established by his alienation from the birth of his child. His anxiety and his place in this family matter should be sympathetically recognised, and every effort made to bring him into close contact with the event.

The birth of a child is not a woman's monopoly. It is the major incident in the lives of three people—a father, a mother and a child. Many husbands suffer more in childbirth than the women who bear their babies. To overlook or prevent the mutual companionship and assistance of husband and wife during pregnancy and labour, is to show a grievous lack of human understanding.

The baby is but the beginning—not the end-all of medical or obstetric care. By tuition and direction the precepts for health of mind and body, the grandeur and sublimity of childbirth and the lustre of unfolding motherhood become reality. Such truth and beauty are the firm foundations of a family life. The physician holds within his hand the power to fashion this small unit, from which emerges all good or evil in communities. The art of living is the art of giving life.

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